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Accreditation of the University

Accreditation

Carleton University, a founding member of the Council of Ontario Universities, enjoys full accreditation by the Ministry of Advanced Education and Skills Development of the Province of Ontario.

All programs of study leading to a Bachelor of Engineering degree are accredited by the Canadian Engineering Accreditation Board of Engineers Canada.

The Bachelor of Architecture degree offered by the School of Architecture is recognized by the Canadian Architectural Certification Board as a prerequisite to apply for certification of academic qualifications for registration to practice as an architect in a provincial association.

The Bachelor's, Master's and Doctoral programs offered by the Sprott School of Business are accredited by the Association to Advance Collegiate Schools of Business (AACSB International) and by the Network of International Business Schools (NIBS).

The Bachelor of Computer Science Honours Degree Program is accredited by the Accreditation Council of the Canadian Information Processing Society.

The B.Sc. Honours Chemistry and B.Sc. Honours Chemistry with Concentration in Nanotechnology are accredited by the Canadian Society for Chemistry.

The School of Industrial Design was established at Carleton on the recommendation of a study prepared by the Association of Canadian Industrial Designers. Initial funding for the school was supplied by Design Canada, Ministry of Industry, Trade and Commerce.

The Bachelor of Mathematics Honours Degree Program in Statistics is accredited by the Statistical Society of Canada (SSC).

The Bachelor of Social Work and Master of Social Work degree programs have been fully accredited by the Canadian Association of Social Work Education.

Carleton University participates in the Ontario Student Assistance Program, other provincial assistance programs and the Canada Student Loans Program, and is recognized for the Quebec Loans and Bursaries Program.

Carleton University's degree programs are recognized in the United States by the William D. Ford Federal Direct Loan (Direct Loan) Program and by the U.S. Department of Veterans Affairs.

Disclaimer

Disclaimer

The Carleton University Undergraduate and Graduate Calendars are published several months in advance of the beginning of the academic year and are intended to assist readers to understand the academic and administrative structure, policies and procedures of the University, and to describe the academic programs offered. By the act of registration each student becomes bound by the policies and regulations of Carleton University. Students are responsible for familiarizing themselves with the general information, rules, and regulations of Carleton University, as well as the specific requirements of each program, degree, diploma or certificate sought. It is the student's responsibility to ensure that the courses chosen are appropriate to the program requirements.

Carleton University reserves the right to make changes in the information contained in the University Calendars without prior notice. Not every course listed in the Undergraduate or Graduate Calendar will necessarily be offered in any academic year. Carleton reserves the right to limit the number of students who enrol in any program or course. While reasonable efforts will be made to offer courses as required within programs, admission to a program does not guarantee admission to any given course. If there is an inconsistency between the Undergraduate or Graduate Calendars and such regulations and policies as established by resolution of Senate, the version of such material as it is established by Senate will prevail.

Carleton University does not accept, and hereby expressly disclaims, any and or all responsibility or liability to any person, persons or group, either direct or indirect, consequential or otherwise, arising out of any one or more of such changes and, specifically, the University hereby disclaims liability to any person who may suffer loss as a result of reliance upon any information contained in the University Calendars. Additions and corrections will be posted at the Updates page.

Carleton University disclaims all responsibility and liability for loss or damage suffered or incurred by any student or other party as a result of delays in or termination of its services, courses or classes for any reason whatsoever including but not limited to by reason of force majeure, fire, flood, riots, war, strikes, lock#outs, damage to University property, financial exigency or other events beyond the reasonable control of the University. Carleton University also disclaims any and all liability for damages arising as a result of errors, interruptions or disruptions to operations or connected with its operations or its campuses, arising out of computer failure or non#compliance of its computing systems.

Copyright Compliance

Carleton University is committed to compliance in all copyright matters. Noncompliance is a violation of the Canadian Copyright Act. In addition to any actions that might be taken by any copyright owner or its licensing agent, the University will take steps against any breach of this policy. See <http://www.library.carleton.ca/copyright/> for guidelines on copyright compliance.

The Academic Year (Graduate and Undergraduate Studies)

This schedule contains the dates prescribed by the University Senate for academic activities. Dates relating to fee payment, cancellation of course selections, late charges, and other fees or charges will be published in the Important Dates and Deadlines section of the Registration Website (carleton.ca/registration).

The academic year is divided into three terms:

Summer term: May - August

Fall term: September - December

Winter term: January - April

Courses are offered in the following patterns:

Early summer: May - June

Late summer: July - August

Full summer: May - August

Early fall: September - October

Late fall: November - December

Full fall: September - December

Early winter: January - February

Late winter: March - April

Full winter: January - April

Fall/winter: September - April

Courses are offered during the day and in the evening.

Summer 2022

Fall 2022

Winter 2023

Summer 2023

Fall 2023

Winter 2024

Summer 2024

Date	Activity
SUMMER TERM 2022	
March 1, 2022	Last day for receipt of applications for admission to an undergraduate degree program for the summer term.
April 28, 2022	Deadline for course outlines to be made available to students registered in early and full summer courses.
May 1, 2022	Last day for receipt of applications for undergraduate degree program transfers for the summer term.
May 5, 2022	Early summer and full summer classes begin.

May 12, 2022	Last day for registration and course changes (including auditing) for early summer courses.
May 13, 2022	Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2022 and must register for the summer 2022 term.
May 19, 2022	Last day for registration and course changes (including auditing) for full summer courses.
May 20, 2022	Last day to withdraw from early summer and full summer courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.
May 20-June 1, 2022	Fall/winter and winter term deferred final examinations will be held.
May 23, 2022	Statutory holiday. University closed.
May 27, 2022	Last day to request Formal Examination Accommodation Forms for June examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.
June 10, 2022	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, for early summer courses before the official examination period (see Examination Regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
June 17, 2022	Last day of early summer classes. (NOTE: full summer classes resume July 4.)

	Last day for take home examinations to be assigned, with the exception of those conforming to the Examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.	July 25, 2022	Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.
	Classes will follow a Monday schedule.	July 29, 2022	Last day to request Formal Examination Accommodation Forms for August examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.
	Last day for academic withdrawal from early summer courses.	August 1, 2022	Statutory holiday. University closed.
June 18-19, 2022	Last day for handing in term assignments, subject to any earlier course deadline.	August 9, 2022	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, before the official examination period (see Examination Regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
June 20-26, 2022	No classes or examinations take place.	August 16, 2022	Last day of late summer and full summer classes.
June 26, 2022	Final examinations in early summer courses and mid-term examinations in full summer courses may be held. Examinations are normally held all seven days of the week.		Last day for take home examinations to be assigned, with the exception of those conforming to the Examination Regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
	All take home examinations are due on this day, with the exception of those conforming to the Examination regulations in the Academic Regulations University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.	June 27, 2022	Deadline for course outlines to be made available to students registered in late-summer courses.
July 1, 2022	Statutory holiday. University closed.	July 4, 2022	Late summer classes begin. Full summer classes resume.
July 11, 2022	Last day for registration and course changes (including auditing) for late summer courses.	July 22, 2022	Last day to withdraw from late summer courses with a full fee adjustment.
July 22-24, 2022	Early summer term deferred final examinations to be held.	August 17-18, 2022	No classes or examinations take place.
		August 19-25, 2022	Final examinations in late summer and full summer courses may be held. Examinations are normally held all seven days of the week.

August 25, 2022 All take home examinations are due on this day, with the exception of those conforming to the Examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.

September 23-25, 2022 Full and late summer term deferred final examinations to be held.

Date Activity

FALL TERM 2022

August 31, 2022 Deadline for course outlines to be made available to students registered in full fall, early fall and fall/winter courses.

September 1, 2022 Last day for receipt of applications from potential fall (November) graduates.

September 5, 2022 Statutory holiday. University closed.

September 6, 2022 Academic orientation (undergraduate and graduate students).

Orientation for new Teaching Assistants.

All new students are expected to be on campus. Class and laboratory preparation, departmental introductions for students, and other academic preparation activities will be held.

September 7, 2022 Fall term begins. Full fall, early fall, and fall/winter classes begin.

September 13, 2022 Last day for registration and course changes (including auditing) in early fall courses.

September 20, 2022 Last day for registration and course changes (including auditing) in full fall, late fall, and fall/winter courses.

Last day to withdraw from early fall courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.

Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in fall 2022 and must register for the fall 2022 term.

September 23-25, 2022 Full summer and late summer term deferred final examinations will be held.

September 30, 2022 Last day to withdraw from full fall and fall/winter courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.

Last day to request Formal Examination Accommodation Forms for Oct/Nov final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.

October 1, 2022 Last day for academic withdrawal from early fall courses.

October 7, 2022 December examination schedule (fall term final and fall/winter mid-terms) available online.

October 10, 2022 Statutory holiday. University closed.

October 14, 2022 Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in early fall term undergraduate courses, before the official Oct/ Nov final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).

October 15, 2022	Last day for receipt of applications for admission to an undergraduate degree program for the winter term from applicants whose documents originate from outside Canada or the United States.	November 18-20, 2022	Early fall undergraduate deferred final examinations will be held.
October 21, 2022	Last day of early fall classes. Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.	November 25, 2022	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in full fall term or fall/winter undergraduate courses, before the official December final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
	Last day that can be specified by a course instructor as a due date for term work for early fall courses.	December 1, 2022	Last day for receipt of applications from potential winter (February) graduates. Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.
October 24, 2022	Deadline for course outlines to be made available to students registered in late fall courses.	December 2, 2022	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in late fall term undergraduate courses, before the official final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
October 24-28, 2022	Fall break, no classes.		
October 29-30, November 5-6, 2022	Final examinations in early fall undergraduate courses will be held.		
October 31, 2022	Late fall classes begin.		
November 11, 2022	Last day to withdraw from late fall term courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript. Last day to request Formal Examination Accommodation Forms for December full fall and late fall final examinations and fall/winter midterm examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.	December 9, 2022	Fall term ends. Last day of full fall and late fall classes. Classes follow a Monday schedule. Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
November 15, 2022	Last day for academic withdrawal from full fall and late fall courses. Last day for receipt of applications for admission to an undergraduate degree program for the winter term.		

Last day that can be specified by a course instructor as a due date for term work for full and late fall courses.

Last day for receipt of applications for undergraduate degree program transfers for winter term.

December 10-22, 2022

Final examinations in full fall and late fall courses and mid-term examinations in fall/winter courses will be held. Examinations are normally held all seven days of the week.

December 22, 2022

All final take-home examinations are due on this day, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.

December 25, 2022 through January 3, 2023 inclusive

University closed.

Date	Activity
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WINTER TERM 2023

January 2, 2023	Deadline for course outlines to be made available to students registered in full winter and early winter term courses.
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January 4, 2023	University reopens.
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January 9, 2023	Winter term begins. Full winter and early winter classes begin.
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January 13, 2023	Last day for registration and course changes (including auditing) in early winter courses.
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January 20, 2023	Last day for registration and course changes (including auditing) in full winter and late winter courses.
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Last day to withdraw from early winter courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.

Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in winter 2023 and must register for the winter 2023 term.

January 20-22, 27-29, 2023	Full fall and late fall term deferred final examinations will be held.
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January 27, 2023	Last day to request Formal Examination Accommodation Forms for Feb/Mar final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.
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January 31, 2023	Last day to withdraw from full winter and the winter portion of fall/winter courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.
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February 1, 2023	Last day for academic withdrawal from early winter courses.
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February 10, 2023	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in early winter term undergraduate courses, before the official Feb/Mar final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
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February 17, 2023	Last day of early winter classes.
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	<p>Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.</p>		<p>Last day for receipt of applications for admission from candidates who wish to be guaranteed consideration for financial assistance (including Carleton fellowships, scholarships and teaching assistantships) administered by Carleton University. Candidates whose applications are received after the March 1 deadline may be considered for the award of a fellowship, scholarship or teaching assistantship (Graduate students only).</p>
	<p>Last day that can be specified by a course instructor as a due date for term work for early winter courses.</p>		
February 20, 2023	<p>April examination schedule available online.</p> <p>Statutory holiday. University closed.</p>	March 10, 2023	<p>Last day to withdraw from late winter term courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.</p>
February 20-24, 2023	<p>Winter break, no classes.</p>	March 15, 2023	<p>Last day for academic withdrawal from full winter, late winter, and fall/winter courses.</p>
February 25-26, March 4-5, 2023	<p>Final examinations in early winter undergraduate courses will be held.</p>		<p>Last day to request Formal Examination Accommodation Forms for April full winter, late winter, and fall/winter final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.</p>
February 27, 2023	<p>Late winter classes begin.</p>	March 17-19, 2023	<p>Early winter undergraduate deferred final examinations will be held.</p>
March 1, 2023	<p>Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.</p>	March 29, 2023	<p>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in full winter term or fall/winter undergraduate courses, before the official April final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).</p>
	<p>Last day for receipt of applications to Bachelor of Architecture, Bachelor of Industrial Design, Bachelor of Information Technology (Interactive Multimedia and Design), Bachelor of Music and Bachelor of Social Work degree programs for the fall/winter session.</p>		
	<p>Last day for receipt of applications for admission to an undergraduate program for the summer term.</p>		

April 1, 2023	Last day for receipt of applications for admission to an undergraduate degree program for the fall/winter session from applicants whose documents originate from outside Canada or the United States, except for applications due February 1 or March 1.	April 27, 2023	All final take-home examinations are due on this day, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
	Last day for receipt of applications from potential spring (June) graduates.	May 1, 2023	Last day for receipt of applications for undergraduate internal degree transfers to allow for registration for the summer session.
April 5, 2023	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in late winter term undergraduate courses, before the official final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).	May 13, 2023	Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2023 and must register for the summer 2023 term.
April 7, 2023	Statutory holiday. University closed.	May 19-31, 2023	Full winter, late winter, and fall/winter deferred final examinations will be held.
April 12, 2023	Winter term ends. Last day of full winter, late winter, and fall/winter classes.	June 1, 2023	Last day for receipt of applications for admission to an undergraduate program for the fall/winter session except for applications due March 1 or April 1.
	Classes follow a Friday schedule. Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.	June 15, 2023	Last day for receipt of applications for undergraduate degree program transfers for the fall term.
	Last day that can be specified by a course instructor as a due date for term work for full winter and late winter courses.	Date	Activity
April 13-14, 2023	No classes or examinations take place.	SUMMER TERM 2023	
April 15-27, 2023	Final examinations in full winter, late winter, and fall/winter courses will be held. Examinations are normally held all seven days of the week.	March 1, 2023	Last day for receipt of applications for admission to an undergraduate degree program for the summer term.
		April 27, 2023	Deadline for course outlines to be made available to students registered in early summer and full summer courses.
		May 1, 2023	Last day for receipt of applications for undergraduate degree program transfers for the summer term.
		May 4, 2023	Summer term begins. Early summer and full summer classes begin.

May 10, 2023	Last day for registration and course changes (including auditing) in early summer courses.	June 9, 2023	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade in early summer term undergraduate courses before the official examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
May 12, 2023	Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2023 and must register for the summer 2023 term.		
May 17, 2023	Last day for registration and course changes (including auditing) in full summer courses. Last day to withdraw from early summer courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.	June 16, 2023	Last day of early summer classes. (NOTE: full summer classes resume July 4.) Last day for take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
May 19-31, 2023	Full winter, late winter, and fall/winter term deferred final examinations will be held.		Classes follow a Monday schedule.
May 22, 2023	Statutory holiday. University closed.		Last day for handing in term work, subject to any earlier course deadline.
May 26, 2023	Last day to request Formal Examination Accommodation Forms for June examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.	June 17-18, 2023	No classes or examinations take place.
May 31, 2023	Last day to withdraw from full summer courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.	June 19-25, 2023	Final examinations in early summer courses and mid-term examinations in full summer courses will be held. Examinations are normally held all seven days of the week.
June 1, 2023	Last day for academic withdrawal from early summer courses.	June 25, 2023	All final take-home examinations are due on this day, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
		June 27, 2023	Deadline for course outlines to be made available to students registered in late summer courses.
		July 3, 2023	Statutory holiday (July 1 observed). University closed.

July 4, 2023	Late summer classes begin and full summer classes resume.		
July 10, 2023	Last day for registration and course changes (including auditing) in late summer courses.		Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
July 17, 2023	Last day to withdraw from late summer courses with a full fee adjustment. Withdrawals after this date will result in a permanent notation of WDN on the official transcript.		Last day for handing in term work, subject to any earlier course deadline.
July 21-23, 2023	Early summer term deferred final examinations will be held.	August 17-18, 2023	No classes or examinations take place.
July 24, 2023	Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.	August 19-25, 2023	Final examinations in full summer and late summer courses will be held. Examinations are normally held all seven days of the week.
July 28, 2023	Last day to request Formal Examination Accommodation Forms for August final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.	August 25, 2023	All final take-home examinations are due on this day, with the exception of those conforming to the examinations regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
August 1, 2023	Last day for academic withdrawal from full and late summer courses.	September 22-24, 2023	Full and late summer term deferred final examinations will be held.
August 7, 2023	Statutory holiday. University closed.	Date	Activity
August 9, 2023	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade in late summer and full summer term undergraduate courses before the official examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).	FALL TERM 2023	
August 16, 2023	Last day of full summer and late summer classes. Classes follow a Monday schedule.	August 29, 2023	Deadline for course outlines to be made available to students registered in full fall, early fall, and fall/winter courses.
		September 1, 2023	Last day for receipt of applications from potential fall (November) graduates.
		September 4, 2023	Statutory holiday. University closed.
		September 5, 2023	Academic orientation (undergraduate and graduate students).
			Orientation for new Teaching Assistants.

	All new students are expected to be on campus. Class and laboratory preparation, departmental introductions for students, and other academic preparation activities will be held.	October 13, 2023	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in early fall term undergraduate courses, before the official Oct/Nov final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar).
September 6, 2023	Fall term begins. Full fall, early fall, and fall/winter classes begin.		
September 12, 2023	Last day for registration and course changes (including auditing) in early fall courses.		
September 19, 2023	Last day for registration and course changes (including auditing) in full fall, late fall, and fall/winter courses. Last day to withdraw from early fall courses with a full fee adjustment.	October 15, 2023	Last day for receipt of applications for admission to an undergraduate degree program for the winter term from applicants whose documents originate from outside Canada or the United States.
	Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in fall 2023 and must register for the fall 2023 term.	October 20, 2023	Last day of early fall classes. Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/General Regulations of the Graduate Calendar.
September 22-24, 2023	Full summer and late summer term deferred final examinations will be held.		Last day that can be specified by a course instructor as a due date for term work for early fall courses.
September 30, 2023	Last day to withdraw from full fall and fall/winter courses with a full fee adjustment.		
October 1, 2023	Last day for academic withdrawal from early fall courses. Last day to request Formal Examination Accommodation Forms for Oct/Nov final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.	October 23, 2023	Deadline for course outlines to be made available to students registered in late fall courses.
		October 23-27, 2023	Fall break, no classes.
		October 28-29, November 4-5, 2023	Final examinations in early fall undergraduate courses will be held.
		October 30, 2023	Late fall classes begin.
		November 10, 2023	Last day to withdraw from late fall term courses with a full fee adjustment.
October 6, 2023	December examination schedule (fall term final and fall/winter mid-terms) available online.	November 15, 2023	Last day for academic withdrawal from full fall and late fall courses.
October 9, 2023	Statutory holiday. University closed.		

	<p>Last day to request Formal Examination Accommodation Forms for December full fall and late fall final examinations and fall/winter midterm examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.</p> <p>Last day for receipt of applications for admission to an undergraduate degree program for the winter term.</p>	<p>Last day of full fall and late fall classes.</p> <p>Classes follow a Monday schedule.</p> <p>Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.</p> <p>Last day that can be specified by a course instructor as a due date for term work for full and late fall courses.</p>
November 19-21, 2023	Early fall undergraduate deferred final examinations will be held.	
November 24, 2023	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in full fall term or fall/winter undergraduate courses, before the official December final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).	<p>Last day for receipt of applications for undergraduate degree program transfers for winter term.</p> <p>December 10-22, 2023</p> <p>Final examinations in full fall and late fall courses and mid-term examinations in fall/winter courses will be held. Examinations are normally held all seven days of the week.</p>
December 1, 2023	<p>Last day for receipt of applications from potential winter (February) graduates.</p> <p>Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.</p>	<p>December 22, 2023</p> <p>All final take-home examinations are due on this day, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.</p>
	<p>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in late fall term undergraduate courses, before the official final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).</p>	<p>December 25, 2023 through January 3, 2024 inclusive</p> <p>University closed.</p>
December 8, 2023	<p>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in late fall term undergraduate courses, before the official final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).</p> <p>Fall term ends.</p>	<p>Date Activity</p> <p>WINTER TERM 2024</p> <p>January 1, 2024</p> <p>Deadline for course outlines to be made available to students registered in full winter and early winter term courses.</p> <p>January 4, 2024</p> <p>University reopens.</p> <p>January 8, 2024</p> <p>Winter term begins. Full winter and early winter classes begin.</p> <p>January 12, 2024</p> <p>Last day for registration and course changes (including auditing) in early winter courses.</p>

January 19, 2024	<p>Last day for registration and course changes (including auditing) in full winter and late winter courses.</p> <p>Last day to withdraw from early winter courses with a full fee adjustment.</p>	<p>Last day for final take-home examinations to be assigned in early winter courses, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.</p>
	<p>Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in winter 2024 and must register for the winter 2024 term.</p>	<p>Last day that can be specified by a course instructor as a due date for term work for early winter courses.</p>
January 26-28, February 3-5, 2024	<p>Full fall and late fall term deferred final examinations will be held.</p>	<p>April examination schedule available online.</p>
January 31, 2024	<p>Last day to withdraw from full winter and the winter portion of fall/winter courses with a full fee adjustment.</p>	<p>February 19, 2024</p> <p>Statutory holiday. University closed.</p>
February 1, 2024	<p>Last day for academic withdrawal from early winter courses.</p>	<p>Deadline for course outlines to be made available to students registered in late winter courses.</p>
	<p>Last day to request Formal Examination Accommodation Forms for Feb/Mar final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.</p>	<p>February 19-23, 2024</p> <p>Winter break, no classes.</p>
February 9, 2024	<p>Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in early winter term undergraduate courses, before the official Feb/ Mar final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).</p>	<p>February 24-25, March 2-3, 2024</p> <p>Final examinations in early winter undergraduate courses will be held.</p>
February 16, 2024	<p>Last day of early winter classes.</p>	<p>February 26, 2024</p> <p>Late winter classes begin.</p>
		<p>March 1, 2024</p> <p>Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.</p>
		<p>Last day for receipt of applications to Bachelor of Architecture, Bachelor of Industrial Design, Bachelor of Information Technology (Interactive Multimedia and Design), Bachelor of Music and Bachelor of Social Work degree programs for the fall/ winter session.</p> <p>Last day for receipt of applications for admission to an undergraduate program for the summer term.</p>

	Last day for receipt of applications for admission from candidates who wish to be guaranteed consideration for financial assistance (including Carleton fellowships, scholarships and teaching assistantships) administered by Carleton University. Candidates whose applications are received after the March 1 deadline may be considered for the award of a fellowship, scholarship or teaching assistantship (Graduate students only).	April 1, 2024	Last day for receipt of applications for admission to an undergraduate degree program for the fall/winter session from applicants whose documents originate from outside Canada or the United States, except for applications due February 1 or March 1.
March 8, 2024	Last day to withdraw from late winter term courses with a full fee adjustment.		
March 15, 2024	Last day for academic withdrawal from full winter, late winter, and fall/winter courses. Last day to request Formal Examination Accommodation Forms for April full winter, late winter, and fall/winter final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.	April 3, 2024	Last day for receipt of applications from potential spring (June) graduates. Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in late winter term undergraduate courses, before the official final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
March 15-17, 2024	Early winter undergraduate deferred final examinations will be held.	April 10, 2024	Winter term ends. Last day of full winter, late winter, and fall/winter classes.
March 27, 2024	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade, in full winter term or fall/winter undergraduate courses, before the official April final examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).		Classes follow a Friday schedule. Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
March 29, 2024	Statutory holiday. University closed.	April 11-12, 2024	Last day that can be specified by a course instructor as a due date for term work for full winter and late winter courses. No classes or examinations take place.
		April 13-25, 2024	Final examinations in full winter, late winter, and fall/winter courses will be held. Examinations are normally held all seven days of the week.

April 25, 2024	All final take-home examinations are due on this day, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.	May 10, 2024	Last day for registration and course changes (including auditing) in early summer courses. Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2024 and must register for the summer 2024 term.
May 1, 2024	Last day for receipt of applications for undergraduate internal degree transfers to allow for registration for the summer session.	May 17, 2024	Last day for registration and course changes (including auditing) in full summer courses. Last day to withdraw from early summer courses with a full fee adjustment.
May 10, 2024	Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in spring 2024 and must register for the summer 2024 term.	May 19-29, 2024	Full winter, late winter, and fall/winter term deferred final examinations will be held.
May 17-29, 2024	Full winter, late winter, and fall/winter deferred final examinations will be held.	May 20, 2024	Statutory holiday. University closed.
June 1, 2024	Last day for receipt of applications for admission to an undergraduate program for the fall/winter session except for applications due March 1 or April 1.	May 31, 2024	Last day to withdraw from full summer courses with a full fee adjustment.
June 15, 2024	Last day for receipt of applications for undergraduate degree program transfers for the fall term.	June 1, 2024	Last day for academic withdrawal from early summer courses. Last day to request Formal Examination Accommodation Forms for June examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.
Date	Activity	June 11, 2024	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade in early summer term undergraduate courses before the official examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
SUMMER TERM 2024			
March 1, 2024	Last day for receipt of applications for admission to an undergraduate degree program for the summer term.	June 18, 2024	Last day of early summer classes. (NOTE: full summer classes resume July 2.)
April 29, 2024	Deadline for course outlines to be made available to students registered in early summer and full summer courses.		
May 1, 2024	Last day for receipt of applications for undergraduate degree program transfers for the summer term.		
May 6, 2024	Summer term begins. Early summer and full summer classes begin.		

	Last day for take-home examinations to be assigned in early summer courses, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
	Last day that can be specified by a course instructor as a due date for term work for early summer courses.
June 19-20, 2024	No classes or examinations take place.
June 21-27, 2024	Final examinations in early summer courses and mid-term examinations in full summer courses will be held. Examinations are normally held all seven days of the week.
June 25, 2024	Deadline for course outlines to be made available to students registered in late summer courses.
June 27, 2024	All final take-home examinations are due on this day, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
July 1, 2024	Statutory holiday. University closed.
July 2, 2024	Late summer classes begin and full summer classes resume.
July 8, 2024	Last day for registration and course changes (including auditing) in late summer courses.
July 15, 2024	Last day to withdraw from late summer courses with a full fee adjustment.
July 19-21, 2024	Early summer term deferred final examinations will be held.
July 22, 2024	Last day for graduate students to submit their supervisor-approved thesis, in examinable form to the department.

August 1, 2024	Last day for academic withdrawal from full and late summer courses.
	Last day to request Formal Examination Accommodation Forms for August final examinations to the Paul Menton Centre for Students with Disabilities. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.
August 5, 2024	Statutory holiday. University closed.
August 7, 2024	Last day for summative tests or examinations, or formative tests or examinations totaling more than 15% of the final grade in late summer and full summer term undergraduate courses before the official examination period (see examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar).
August 14, 2024	Last day of late summer and full summer classes.
	Classes follow a Monday schedule.
	Last day for final take-home examinations to be assigned, with the exception of those conforming to the examination regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.
	Last day that can be specified by a course instructor as a due date for term work for late summer and full summer courses.
August 15-16, 2024	No classes or examinations take place.
August 17-23, 2024	Final examinations in full summer and late summer courses will be held. Examinations are normally held all seven days of the week.

August 23, 2024

All final take-home examinations are due on this day, with the exception of those conforming to the examinations regulations in the Academic Regulations of the University section of the Undergraduate Calendar/ General Regulations of the Graduate Calendar.

September 20-22, 2024

Full and late summer term deferred final examinations will be held.

Glossary

Glossary

The following glossary of definitions is intended to provide explanations of how certain important terms are used throughout the Calendar. In rare cases where a discrepancy may occur between the definition provided in this Glossary and the use of the term in the remainder of the Calendar, the term as used in the remainder of the Calendar takes precedence.

The Glossary is not intended to be exhaustive; students should refer to Carleton's web site for other important information (e.g., carleton.ca/registrar; gradstudents.carleton.ca).

Except where noted, all definitions apply to undergraduate and graduate students.

| A | B | C | D | E | F | G | H | I | J | K | L | M |
| N | O | P | Q | R | S | T | U | V | W | X | Y | Z |

Notation	Description
A	
Academic Continuation Evaluation (ACE)	The ACE is the end-of-term assessment of student academic standing in undergraduate degree programs and special studies. The possible outcomes of an ACE are <i>Eligible to Continue</i> , <i>Academic Warning</i> , <i>Required to Withdraw for Two Terms</i> , <i>Continue in Non-Honours</i> , <i>Continue in Alternate</i> , <i>Dismissed from Program</i> , or <i>Required to Withdraw for Two Years</i> .
Auditing Student	A student who attends a course for interest and not for credit. Formal registration is required.
B	
Bachelor's Program	An undergraduate, non-honours academic program of study requiring a minimum of 15.0 credits.
C	
Calendar	The official publication of academic regulations, academic programs and course descriptions as approved by the Senate.
Certificate	An undergraduate certificate is a stand-alone Credential that may be taken concurrently with a bachelor's program or independently. It is normally constituted by a structured set of at least four credits of sequential courses of different levels in a particular discipline or area of study that introduces students to, or extends their knowledge of, that discipline or area of study.
Challenge for Credit	Undergraduate academic course credit gained through examination based on a student's prior learning experience gained through professional or work experience. A successful challenge for credit is noted in the student's record as CH. (An unsuccessful challenge for credit is noted as UCH). A CH is neither included in the CGPA calculation nor used to satisfy the degree program residency requirement. Challenge for Credit is not available in all courses.
Collaborative Specialization	At the graduate level the term "collaborative specialization" refers to an Option added to a degree program that provides an experience in a discipline or intellectual area in addition to that provided in the student's home program and meets the requirements identified by the Quality Council's corresponding definition.
Concentration	A program Element recorded on the transcript and diploma constituted by at least 3.5 credits of required courses at the undergraduate level and 1.5 credits of required courses at the Master's level that concentrates on a particular area of study within the program and provides the student with specific expertise, knowledge and/or practice. At the Doctoral level, a concentration is constituted by at least three curricular academic requirements, excluding the dissertation, residency and language requirements, that form a distinctive area of study related to the concentration.
Co-operative Education	An undergraduate or graduate Option comprising work periods combined with academic study to acquire work-related experience; the co-op option is intended to complement the student's academic study.
Core	A course or group of courses that are a subset of the courses that constitute a major in an undergraduate program. These are courses of special importance to undergraduate programs and are subject to specific CGPA requirements.
Cotutelle	An Option in any Ph.D. program. Doctoral students undertake to complete the requirements of a Ph.D. program in both their home university and a partner university in another country.

Course	<p>A course is a unit of teaching that may count as credit towards a Credential. Courses typically last one academic term and focus on one subject area with a prescribed sequence of units of study (lectures, seminars, tutorials, workshops, laboratories, assignments, essays, tests, examinations and so on). Courses are delivered by one or more instructors and have a fixed roster of students.</p> <p>Courses have unique eight-character alphanumeric course codes, titles and descriptions. The credit value is indicated in square brackets following the course number.</p>
Course Numbering	<p>The first number in a course designation (e.g. 0000, 1000, 2000, 3000, 4000) indicates the knowledge level of a course and not the year of registration or year standing one requires to enroll in it. One can enroll in any course provided one meets the prerequisites. Prerequisites come in many forms and combinations such as but not limited to year standing, completion of other courses, registration in a specific program, permission of the Department, and specific CGPA requirements. 0000-level courses are those that may be required to satisfy prerequisites. 1000-level courses are typically introductory or foundation level courses. 2000-level and 3000-level courses are typically intermediate to upper-intermediate level courses. 4000-level courses are typically advanced level courses. 5000 and 6000-level are graduate level courses.</p>
Course Outline	<p>Instructors are required to provide students in each course a written Course Outline (distributed in class or electronically), on or before the first teaching day for undergraduate courses, and before the last date for late registration for graduate courses. The course outline must specify all the elements that will contribute to the final grade, as well as the overall grade breakdown for the course.</p>
Courses Set Aside	<p>Courses that do not contribute to the fulfilment of graduation requirements within the student's program:</p> <ol style="list-style-type: none"> 1. Extra to the Degree (ETD): Passed credits that are in excess of the required credits; 2. No Credit for Degree (NCD): Passed credits that are ineligible for credit in the student's program; 3. Forfeit: Repeated courses, course equivalencies, preclusions, and courses placed in this category by an academic standing committee or an appeal committee.
Credential	<p>An academic qualification awarded by the University Senate upon successful completion of an academic program. All credentials are either degrees (bachelors, masters, or doctoral), diplomas, or certificates.</p>
Credit	<p>The academic value of a course (for example, 0.0, 0.5, 1.0, et cetera).</p>
Credits Not in the Major	<p>Credits Not in the Major are credits that must be taken in programs that require Credits Not in the Major from disciplines and intellectual areas other than those which constitute the discipline, disciplines or intellectual area of the major in such programs. Credits Not in the Major constitute one form of restricted electives.</p>
Cumulative Grade Point Average (CGPA)	<p>The key assessment tool for undergraduate Academic Continuation Evaluation, and graduate and undergraduate graduation requirements and distinctions. The CGPA may be used in assessments for scholarships, medals, and other milestones. The CGPA is the average of grade points earned on all courses required for and counting towards graduation from the student's current program (overall CGPA), or the average of grade points earned on a subset of such courses (for example, those constituting the Major or a Minor) at the time the CGPA is calculated.</p>
D	
Degree	<p>A Credential at the Bachelor, Master or Doctoral level awarded by the University Senate upon the successful completion of a prescribed set and sequence of program requirements at a specified standard of performance.</p>

Diploma	<p>Post-baccalaureate Diploma: a stand-alone undergraduate credential for candidates already possessing a bachelor's degree intended to: (a) qualify candidates for consideration for entry into a Master's program; (b) bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline; (c) provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas; or, (d) provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.</p> <p>Post-baccalaureate diplomas are normally constituted by at least three and a maximum of five credits of advanced undergraduate courses.</p> <p>Graduate Diploma:</p> <p>Type 1: Awarded when a candidate admitted to a master's program leaves the program after completing a certain proportion of the requirements. Students are not admitted directly to a Type 1 Diploma.</p> <p>Type 2: Offered concurrently with a master's or doctoral degree, the admission to which requires that the candidate be already admitted to the master's or doctoral degree program. A Type 2 Diploma represents an additional, usually interdisciplinary, qualification of 2 to 3 credits.</p> <p>Type 3: A stand-alone, direct-entry program of 2 to 3 credits, generally developed by a unit already offering a related master's (and sometimes doctoral) degree, and designed to meet the needs of a particular clientele or market.</p>
Dual Degree	<p>A Dual Degree program is a joint partnership at the undergraduate or Master's level where a co-enrolment agreement exists between Carleton and another post-secondary institution. Students simultaneously complete a program at both institutions, receiving two diplomas. Students must meet the admission criteria and must fulfill all the program requirements of both institutions within the normal time to completion.</p>
E	
Element	<p>Elements are: (i) Undergraduate: majors, minors, concentrations, and specializations; there are a maximum number of elements that may be taken in conjunction with a program at the undergraduate level; (ii) Graduate: concentrations.</p> <p>Elements are recorded on the transcript and the diploma.</p>
Equivalency	<p>Courses that are of equal credit value and which are considered to be similar enough that they always preclude one another and may serve interchangeably for the other in terms of prerequisites, co-requisites, and program requirements. These will be identified in the calendar as 'Also Listed As', and are commonly referred to as 'cross-listed courses'.</p>
Experiential Learning	<p>Experiential learning is the application of theory and academic content to real-world experiences within the classroom, the community, or the workplace. It may be undertaken independently or in teams. It advances learning outcomes and encourages reflection and application of skills and knowledge in contexts that prepare students for the workplace and civil society.</p>
F	
Field	<p>A Field occurs only at the graduate level, and is defined as an identifiable area of research activity undertaken by a group of faculty of sufficient number.</p>
Flex Term	<p>Flex Term refers to the timing of delivery of 'asynchronous' on-line courses that are currently restricted to special students and in which they may register at any time. Special students may engage with the material of these courses at their own pace. The delivery of 'asynchronous' on-line courses does not therefore conform to the usual beginning and end of Carleton University terms.</p>
Formative Assessment	<p>Formative assessments are those assessments of a student's work carried out during the course that act to provide feedback and guidance to the student in addition to assessing the student's performance.</p>
Free Elective	<p>Free electives are any approved credit course normally at the 1000-level or higher – including courses from the discipline, disciplines or intellectual areas that identify the major of the degree program in question – that may be taken to make up the number of credits required for the degree program in question.</p>
G	
Good Academic Standing	<p>At the undergraduate level, good academic standing signifies that a student is meeting the requirements to be eligible for continuation in their program as defined in Section 3.2.6 of the <i>Academic Regulations of the University</i>.</p>

H	
Honours Bachelor's Program	An undergraduate Bachelor's program requiring a minimum of 20.0 credits that may demand a higher academic standard than a non-honours program. Pathways to completion may be constituted by a thesis, research essay, capstone project, or other significant project.
I	
Internship	<p>An internship is constituted through a course or sequence of courses that provides students with work experience directly related to the subject matter of their degree program. There are two types of undergraduate internships:</p> <ol style="list-style-type: none"> 1. Program Internship: an Option constituted by a structured sequence of at least 4.0 credits of courses of different levels in an honours bachelor's program taken in a work environment off-campus. A program internship provides students with extensive professional work experience directly related to the subject matter of their program. 2. Course Internship: an individual course within a degree program taken in a work environment either on- or off-campus that provides students with professional work experience directly related to the subject matter of their program.
L	
Learning Outcomes	Learning outcomes are discipline-specific statements that describe the observable skills or abilities associated with the essential knowledge, behaviours, and/or values all students are expected to acquire by the end of a course or program of study.
Letter of Permission	A formal document issued by the University Registrar approving a student to register in a course at another institution in lieu of a Carleton course in the student's academic program. The Letter of Permission must be issued before the student takes the course for credit in a Carleton program at another institution.
M	
Major	A program Element recorded on the transcript and diploma. The major is constituted by the required course credits in one or more defined disciplines or intellectual areas that define the principle focus of a student's undergraduate program and constitute the basis for the calculation of the Major CGPA.
Major CGPA	The Major CGPA is calculated as the average grade points earned on the courses that constitute the major.
Mention : francais	An undergraduate Option noted on the transcript denoting specified courses taken in French, which may be used to fulfil program requirements.
Minor	A program Element at the undergraduate level recorded on the transcript and diploma. A minor is a structured set of credits that form a distinct subset of a program or intellectual area. Each Minor requires at least 4.0 and at most 5.0 credits. Access to minors may be restricted. A minor introduces a student to, or extends their knowledge of, a discipline or intellectual area.
O	
Option	An optional addition to or component of a program with requirements distinct from those of an Element: (i) Undergraduate: co-operative education, study abroad, Mention : francais, program internship; (ii) Graduate: co-operative education, Cotutelle (in Ph.D. programs), Dual Master's Degree (in master's programs), collaborative specialization. Options may be taken in addition to elements and are recorded on the transcript and the diploma.
P	
Pathway	A pathway through a program is a route to completion such as: stream, thesis, research essay, research project, or course only. Pathways may be chosen in addition to Elements and Options, and are not recorded on the diploma but are recorded on the transcript.
Practical Assessments	Practical assessments are those assessments, such as exams or term work, of a student's work where the tasks and conditions are similar to what they would experience in a work environment and are designed to complement their academic skills and competencies.
Prerequisite	A required course or courses that must be completed successfully before registering in the course that requires the prerequisite.
Preclusion	Courses that contain sufficient content in common that credit may not be earned for more than one of the courses. Courses that preclude one another are not necessarily considered equivalent and may or may not be interchangeable to fulfil program or specific element requirements.

Program	<p>A specified combination of academic requirements in a discipline or intellectual area of study which leads to a credential (for example, B.A. in Philosophy, Ph.D. in History, M.Sc. in Chemistry, Graduate Diploma in Public Policy and Program Evaluation, Certificate in the Teaching of English as a Second Language).</p> <p>There are five types of programs at the undergraduate level:</p> <ol style="list-style-type: none"> 1. Single-Discipline Program: A Single-Discipline program is a program of at least 15.0 credits in which the courses that constitute the program's major are drawn overwhelmingly from one discipline or intellectual area. 2. Thematic Program: A Thematic program is an interdisciplinary program of at least 15.0 credits that concentrates on a particular interdisciplinary intellectual area or theme, and draws on courses within its major from at least three disciplines or intellectual areas. 3. Single-Discipline Honours Program: A Single-Discipline Honours program is a program of at least 20.0 credits in which the courses that constitute the program's major are drawn overwhelmingly from one discipline or intellectual area. Pathways to completion constituted by a thesis, research essay or significant project may demand a higher academic standard than a course-based pathway. 4. Combined Honours Program: A Combined Honours program is a program of at least 20.0 credits in which a student fulfils the requirements for combined honours majors in two such majors from two different programs. Pathways to completion constituted by a thesis, research essay or significant project may demand a higher academic standard than a course-based pathway. 5. Thematic Honours Program: A Thematic Honours program is an interdisciplinary program of at least 20.0 credits that concentrates on a particular interdisciplinary intellectual area or theme, and draws on courses within its major from at least three disciplines or intellectual areas. Pathways to completion constituted by a thesis, research essay or significant project may demand a higher academic standard than a course-based pathway.
R	
Restricted Elective	<p>Restricted electives are courses required to fulfil elective requirements in an undergraduate program that are not free electives. The courses that may fulfil restricted elective requirements in any program are in other words prescribed by the program.</p> <p>Students should refer to individual program descriptions to determine the courses that may fulfil restricted elective requirements for a program.</p>
S	
Specialization	<p>At the undergraduate level, the term 'specialization' is reserved for specific areas of concentration in programs in which the courses constituting the program's specializations are delivered overwhelmingly by academic units other than the academic unit administering the program.</p> <p>At the graduate level only collaborative specializations exist. See definition for 'collaborative specialization'.</p>
Special Students	<p>Students not admitted to a program or a degree leading to a Credential.</p>
Status	<p>Full-time status for tuition fee purposes:</p> <ol style="list-style-type: none"> 1. Undergraduate students are full-time when registered in a 60% course load per term as defined by the student's academic program: for example, registered in at least 1.5 credits per term in a 2.5 credit normal term course load. Undergraduate students should consult the website of the Academic Advising Centre to determine their eligibility for various Provincial and University services according to the number of credits taken each term. 2. Graduate students are normally admitted and must stay continuously registered as full-time. Students may apply to the Dean of Graduate and Postdoctoral Affairs for exemption from full-time status in exceptional circumstances (for example, medical circumstances); exemptions are normally granted for one term. <p>Part-time status for tuition fee purposes:</p> <ol style="list-style-type: none"> 1. Undergraduate students are part-time when registered in less than a 60% course load per term as defined by the student's academic program (for example, registered in less than 1.5 credits per term). 2. Graduate students may be admitted as part-time students and will be required to continue and complete their program as part-time; a part-time student is not eligible to register in more than 1.25 credits per term, including audit courses.

Stream	A Pathway within an undergraduate program normally constituted by at least 1.5 credits of courses that facilitate concentration on a particular area of study within the program. Streams are not recorded on the diploma but are recorded on the transcript.
Summative Assessment	Summative assessments are those assessments of a student's work carried out at the end of a course or the end of specific components of a course whose sole purpose is to constitute a judgement on a student's performance in the course or a specific component of the course.
T	
Term GPA	Within the Academic Continuation Evaluation for undergraduate and special students, the Term GPA is the ratio of the grade points earned on a course or courses to the total credit value completed in the term of assessment.
Topics Courses	Selected Topics courses normally address topics which fall within a narrow range of topics within a common theme indicated by the course title. Students may not repeat selected topics courses for credit. Special Topics normally address topics chosen from a broad range of topics within a discipline. Their topics vary widely from year-to-year. Students may repeat special topics courses for credit when the topics vary.
Transfer Credit	Academic credit granted for individual courses successfully completed at another institution, either upon admission (admitted with advanced standing from secondary school, or transfer from college or university) or while registered with a Letter of Permission or on exchange.
Transcript	The official record of a student's academic registration and accomplishments at Carleton University.
U	
Undeclared Students	Undergraduate students admitted to a degree who have not chosen a program ('declared a major') within that degree; normally, students are required to choose a program ('declare a major') upon or before completing 3.5 credits.
W	
Withdrawal	A formal process for discontinuing studies in a course or a program. Undergraduate students who wish to drop all courses and terminate their registration in the academic program must follow the procedure available through the Registrar's Office. Students who have been away from the University for nine or more consecutive terms will be withdrawn and must re-apply for admission. Graduate students who wish to drop all courses and terminate their registration in the academic program must notify their department in writing of their intention to withdraw. Students who do not register for three consecutive terms or do not register continuously in their thesis, research essay, or independent research project will be withdrawn and must re-apply for admission.

Regulations

Academic Regulations of the University - Table of Contents

Effective Fall 2019: The Undergraduate Academic Regulations of the University have been renumbered to better represent regulation categories. Click here for a comprehensive list of links to the new regulations.

For questions related to this reorganization, please contact courseleaf@carleton.ca.

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Academic Integrity and Offenses of Conduct

10.1 Academic Integrity Policy

10.1 Academic Integrity Policy

The University has adopted a policy to deal with allegations of academic misconduct. This policy is expressed in the document *Carleton University Academic Integrity Policy*, effective July 1, 2006 and last updated in June 2021. The policy describes in detail its scope of application, principles, definitions, rights and responsibilities, academic integrity standards, procedures, sanctions, transcript notations, appeal process, and records implications.

The complete policy is available at: <https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf>

10.2 Offenses of Conduct: Discrimination and Harassment

10.2.1 Carleton University's Human Rights Policy

The University has in place policies and procedures to deal with allegations of discrimination and harassment, including sexual harassment. These are outlined in detail in the Carleton University Human Rights Policies and Procedures, effective May 1, 2001.

10.2.2 Unacceptable Conduct

Unacceptable conduct is outlined in the policy and includes discrimination or harassment based on race, ancestry, place of origin, colour, ethnic origin, citizenship, creed, political affiliation or belief, sex, sexual orientation, gender identity, age, marital status, family status, or disability/handicap within the meaning of the Ontario Human Rights Code. Unacceptable conduct also includes threatening, stalking and unwelcome communication either in person or through electronic or other means. For the three policy sections below, the definition of prohibited behaviour is described in the italicized section that follows.

From the *Anti-Racism and Ethnocultural Relations Policy*

1. The University prohibits discrimination and harassment, including conduct on the basis of race, ancestry, place of origin, colour, ethnic origin and citizenship that:"

From the *Gender Equality Policy*

1. The University prohibits discrimination and harassment, including conduct on the basis of sex, gender or gender identity that:"

From the *Sexual Orientation Equality Policy*

1. The University prohibits discrimination and harassment, including conduct on the basis of sexual orientation or perceived sexual orientation that:
 - 5.1 Is abusive, demeaning or threatening including behaviour such as name calling; derogatory remarks, gestures and physical attacks; or display of derogatory or belittling pictures and graffiti; or
 - 5.2 Biases administrative and appointment decisions, employment and workplace practices, tenure, promotion, appointment, leave and salary determinations; or
 - 5.3 Biases academic decisions such as admissions, grading, the application of Regulations and scheduling of academic activities; or
 - 5.4 Misuses power, authority or influence; or
 - 5.5 *Discriminates in the provision of goods and services, or access to premises, accommodation and other facilities.*"

From the *Sexual Harassment Prevention Policy*

1. Sexual harassment occurs when an individual engages in sexually harassing behaviour or inappropriate conduct of a sexual nature that is known, or ought reasonably be known, to be unwelcome, and that:
 - 6.1 Interferes with the academic or employment performance or participation in a University-related activity for the person harassed; and/or
 - 6.2 Is associated with an expressed or implied promise of employment-related or academic-related consequence for the person harassed (including reward, reprisal or condition of study or employment); and/or
 - 6.3 Provides a basis for academic or employment decisions affecting the person harassed; and/or
 - 6.4 Creates an abusive, demeaning, or threatening study, work or living environment for the person harassed; and/or
 - 6.5 Excludes the person harassed from rights and/or privileges to which they are entitled.
2. Sexually harassing behaviour may be physical, verbal or psychological. It may be conveyed directly or by telephone, writing or electronic means. Examples of inappropriate sexual conduct include:

- 7.1 Unwelcome sexual solicitations, flirtations or advances; sexually suggestive comments, gestures, threats or verbal abuse;
- 7.2 Unwarranted touching or physical contact of a sexual nature, coerced consent to sexual contact, or sexual assault;
- 7.3 Inappropriate display or transmission of sexually suggestive or explicit pictures, posters, objects or graffiti;
- 7.4 Leering, compromising invitations, or demands for sexual favours;
- 7.5 Degrading, demeaning or insulting sexual comment or content, including unwelcome remarks, taunting, jokes or innuendo about a person's body, sexuality, sexual orientation or sexual conduct;
- 7.6 Misuse of position or authority to secure sexual favours;
- 7.7 Persistent, unwanted attention or requests for sexual contact after a consensual relationship has ended; or
- 7.8 A course of sexualized comment or conduct that interferes with the dignity or privacy of an individual or group."

10.2.3 Enforcement

Enforcement of this policy is carried out according to the procedures established in the policy. The procedures include the provision of advice and information to complainants and respondents and allow for various methods of informal resolution, including mediation.

Students with concerns regarding discrimination, harassment, stalking, sexist or racist behaviour, or any other prohibited action as outlined in the Human Rights Policy, should call or meet with a member of Equity Services for advice and guidance on how to handle the situation. This service is confidential and does not compel the student to take any further action.

Formal complaints must be made in writing and directed to the Dean or Vice President responsible for the area where the complaint took place. Staff in Equity Services are available to assist with the preparation of a formal complaint. Complaints must be made within 12 months after the last alleged incident of discrimination or harassment unless exceptional circumstances apply in which case the University Secretary may grant an extension of up to an additional 12 months.

10.2.4 Formal Procedures

The procedure for formal complaints is outlined below:

1. An allegation shall be made in writing to the Dean of the Faculty in which the program to which the respondent has been admitted belongs or, in the circumstances where the respondent has not been admitted to a program, to the Dean of the Faculty where the majority of courses in which the respondent has registered are administered. An allegation against a student in residence when made by another

student in residence which involves the complainant's enjoyment of their accommodation shall be made to the Vice-President (Academic). The Dean, or the Vice-President (Academic), as the case may be, shall cause to have an investigation conducted and, upon receipt of the report of the investigation, shall either 1) dismiss the allegation on the grounds of insufficient evidence or lack of jurisdiction by the university, or 2) accept that the allegation is founded and seek the agreement of the respondent to a remedy, or 3) refer the matter to the President. A Dean's dismissal of the allegation may be appealed, within ten working days, to the Vice-President (Academic) who may, in turn, either 1) again dismiss the allegation, or 2) accept that the allegation is founded and propose a remedy to the respondent, or 3) refer the matter to the President. In the case of students in residence, where the original allegation has been made to the Vice-President (Academic) and is dismissed, appeal shall be directly to the President who may either 1) again dismiss the allegation, or 2) accept that the allegation is founded and propose a remedy to the respondent, or 3) refer the matter to a tribunal appointed by the Senate.

2. In the instance where the matter has been referred to the President, the latter shall decide whether the University shall conduct a hearing before a tribunal appointed by the Senate. If the allegation is proven, the tribunal shall decide upon one of the following sanctions. The student may be:
 - a. expelled;
 - b. suspended for a period of time from all studies at the University;
 - c. restricted in their use of University facilities; and/or
 - d. given a reprimand.

Should the President decide not to conduct a hearing before a tribunal, the allegation shall be deemed to have been dismissed, but the President shall give written reasons for such a decision, and these reasons shall be communicated to the parties involved.

1. In the instance where the complainant wants redress from the University without the involvement of the respondent, or where the respondent is unknown or is not a member of the University community, and/or where there is a claim that the University has failed or has been negligent in providing a safe, non-hostile environment, the allegation of an offence shall be made in writing to the President, who shall cause an investigation to be conducted. Upon receipt of the report of the investigation, the President may order any relief they deem fit, and shall give written reasons for the decision; which reasons shall be communicated to the complainant.

Information about procedure governing tribunals is available from the Clerk of Senate: senate@carleton.ca.

Academic Regulations for Certificate Students

7.1 Academic Regulations and Requirements for Undergraduate Certificates

In addition to the requirements presented here, students must satisfy the university regulations (see the *Academic Regulations of the University* section of this Calendar).

Definition

An undergraduate certificate is defined as a structured set of at least 4.0 undergraduate credits in a particular discipline or area of study that introduces the student to — or extends their knowledge of — that discipline or area of study. It is normally constituted by a structured set of sequential courses. An undergraduate certificate is a stand-alone credential that may be taken concurrently with a bachelor's program or independently. When taken concurrently, the student is simultaneously considered a Degree Student and a Certificate Student.

Program Requirements

- A minimum of 4.0 credits
- Minimum grade requirements may apply
- Consult the individual program entries for details

Academic Regulations for Degree Students

3.1 Program Regulations

3.1.1 Academic Nomenclature

For a list of common definitions and terms of the University, please consult the Glossary section of this Calendar.

3.1.2 Regulations Governing a Student's Program

Curriculum and regulations are subject to change as the University updates and improves its undergraduate programs. These changes may include alterations to course offerings, program requirements, and academic regulations. In establishing transition policies that determine how these changes will impact in-program students, the University is guided by the intent that students retain the same or improved overall opportunities to succeed.

The following policies are in effect:

3.1.2.1 When a degree student is admitted to the University, the regulations and program requirements for their credential are those in effect at the time of admission. If a student changes program elements in a calendar year subsequent to the term of admission, their program will be governed by the calendar requirements in effect when the change is approved. The general academic regulations governing the student, however, will continue to be those in effect at the time of admission to the University.

3.1.2.2 If, in subsequent years, the student is readmitted to the same or another program, the academic regulations

of the University and the program requirements in effect at the time of readmission will govern the student.

3.1.2.3 As curricular or regulatory changes are introduced in subsequent years, in-program students may choose to complete their studies under the new academic regulations of the University and/or new program requirements. Students who wish to change their calendar year to that which is currently in effect should contact the Registrar's Office.

3.1.2.4 Notwithstanding 3.1.2.1, when circumstances prevent continued application of regulations, program requirements or courses of a previous Calendar, appropriate replacement policies guiding students in adapting to the new situation will be developed and communicated to students.

3.1.2.5 The online version of the Calendar is the official version. Changes approved after the publication date will be posted on the Calendar website.

3.1.3 Absence from the University

Normally, a student is considered to be present at the University in a term in which they have remained registered in a course until after the last day for withdrawal with a full fee adjustment. A student who is not present at the University is considered to be absent from the University.

Degree students who have not been present at the University for more than nine consecutive terms must apply for readmission through Admission Services.

Students who have completed the requirements for the degree and program in which they are registered will be automatically considered for graduation after three consecutive terms of absence from the University.

3.1.4 Voluntary Withdrawal from a Program

Undergraduate students who wish to voluntarily withdraw from their program, without academic penalty, may do so by contacting the Registrar's Office prior to the deadline to withdraw from courses (see Academic Year). The notation "Voluntary Withdrawal from Program" will appear on the official transcript.

3.1.5 Types of Programs

The undergraduate programs of the University are divided into the following categories:

Honours Programs

Honours programs require a minimum of 20.0 credits, and demand a higher academic standard than non-honours programs.

Non-Honours Programs

Non-honours programs require 15.0 or 20.0 credits. Major programs require 20.0 credits.

Engineering and Design programs

Accredited programs offered by the Faculty of Engineering and Design are in Engineering, in Industrial Design, and in Architecture. These programs require at least 20.0 credits and assume a credit load of at least 2.5 credits per term of

study. Some programs within the Faculty of Engineering and Design have time limits for completion.

All of the above programs may include additional elements.

See also Section 2.1.4 Credit Load.

3.1.6 Program Structure

Program Elements

The courses that make up a program are separated into certain standard categories that give the program its structure, allow effective assessment of the student's progress and permit the inclusion of additional notations on the transcript and diploma.

Major

In most programs certain course credits are identified as constituting the Major. The Major specifies the required course credits in one or more defined disciplines, themes, or fields that are the principal focus of a student's program. These programs with a defined Major calculate a Major CGPA in addition to the overall average. A Combined Honours program may be structured with two Majors, one in each contributing discipline or, in some cases, as a single Major. A multidisciplinary program is structured as a single Major drawing together courses from several disciplines.

Note that the use of the term Major as a program element, above, is distinct from the degree program called Major (e.g. B.Sc.Major).

Core

Some programs specify a limited set of credits that constitute a Core. These are courses of special importance to the program and are subject to specific CGPA or minimum grade requirements.

Concentration or Specialization

A Concentration or Specialization is a defined set of courses which provides a student with specific expertise, knowledge and/or practice and so further distinguishes the program in a recognizable way. The credits in the concentration or specialization may or may not be part of the Major. The minimum number of credits for a concentration or specialization at the undergraduate level is 3.5 credits.

Stream

A Stream is a pattern of courses within the program that guides the student's studies and is distinctive from other patterns.

Additions to a Program

Option

An Option is an addition to a program, the pursuit of which does not affect eligibility for the degree without the Option. Registration in the Option does not change the degree requirements. An example is the Co-operative Education Option.

Other additions to a program that do interact with program requirements include: *Mention : français* (see

the Academic Regulations for the Bachelor of Arts), concurrent certificates and concurrent diplomas.

Minor

A Minor is a defined set of courses in a discipline or field that either introduces or extends knowledge of that discipline or field. A Minor may have its own admission requirements. Minors are only available to students already registered as Carleton degree students. Each Minor requires at least 4.0 and at most 5.0 credits. In some circumstances, credits in excess of those required for the main degree may be required to complete the Minor.

3.1.7 University Year Standing

Students in degree programs are given a Year Standing according to the number of credits completed with passing grades and counting towards the degree. The categories are as follows:

First Year:

Fewer than 4.0 credits completed successfully and counting towards the degree.

Second Year:

4.0 through 8.5 credits completed successfully and counting towards the degree.

Third Year:

9.0 through 13.5 credits completed successfully and counting towards the degree.

Fourth Year:

14.0 or more credits completed successfully and counting towards the degree and in a program requiring more than 15.0 credits.

Programs in the Faculty of Engineering and Design identify specific courses that must be completed for a particular year status in that program, which does not necessarily conform to the above formula. Refer to the Engineering and Design section of this Calendar for details.

Year standing assessment occurs regularly and as final grades are received.

3.1.8 Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. See the Undeclared program section of this Calendar for recommended registration information. Normally, Undeclared students are required to be eligible to enter a program within their degree upon or before completing 3.5 credits. Undeclared students should consult Academic Advising Centre for guidance in planning their studies prior to registration.

3.1.9 Changes of Degree and Program

Minimum CGPA requirements for Change of Program Element

Application is made through Carleton Central (Change of Program Element application) for change of program applications in the following cases:

- students who wish to change to a different program within the same degree;
- students who wish to add, drop, or change a Concentration, Specialization, or Minor.

Table 1: Minimum CGPAs Required in New Program Element

Program Credits Completed	Honours	15 Credit Non-Honours	20 Credit Non-Honours
0.0 to 5.5	Overall 4.00	Overall 4.00	Overall 4.00
5.75 to 10.0	Overall 4.00, Major 5.50	Overall 4.00, Major 3.00	Overall 4.00, Major 3.50
10.25 to 15.0	Overall 4.00, Major 6.00	Overall 4.00, Major 4.00	Overall 4.00, Major 3.50
15.25 or more	Overall 5.00, Major 6.50	N/A	Overall 4.00, Major 4.00

Not all program combinations are possible. Additional requirements may apply to certain program elements; please consult with the specific units for the options available.

Co-op Option

Application is made through the Co-op Office for admission to and withdrawal from the Co-op Option.

Application through Admissions Services

The following situations require students to reapply for admission through Admissions Services:

- currently registered students who wish, or who are required, to change their degree;
- students who have been *Required to Withdraw for Two Terms (WT)* or *Required to Withdraw for Two Years (WY)* and wish to return to their original program after the required absence from studies at Carleton University (see Section 3.2.3 of the *Academic Regulations of the University*);
- students who, after completing an undergraduate degree, wish to complete an additional undergraduate degree or certificate;
- students who have left the university and wish to return to a different degree;
- students who have attended another post-secondary institution (except on a letter of permission or exchange program), and wish to transfer obtained credits to their Carleton credential;
- Special Students who wish to be formally admitted to Carleton University (see Section 15 of the *General Admissions Requirements and Procedures*); and
- students who have been away from the university for nine or more consecutive terms.

3.1.10 Course Categories and Courses Set Aside

3.1.10.1 Course Categories

The requirements for some programs may include specific named categories of courses. These categories are defined either in the main regulations section of the

calendar or within the program description. Students should refer to the regulations and course categories for their program for details.

3.1.10.2 Courses Set Aside

Three categories of courses that do not contribute to the fulfilment of graduation requirements may appear on a student's degree audit report:

Extra to the Degree (ETD)

Passed credits that could have counted towards the degree but are in excess of the credits required for graduation are *Extra to Degree*. These credits may be considered for advanced standing in a subsequent degree. This category includes, for example, passed credits at the 1000 level in excess of the 7.0-credit limit.

No Credit for Degree (NCD)

Passed credits that are ineligible for credit in the student's program are *No Credit for Degree*. These credits may be considered for advanced standing in a subsequent degree. This category includes, for example, courses specifically prohibited from credit in a particular degree.

Forfeit

Courses that cannot be used for credit in this or any subsequent program. This category includes:

1. repeated courses;
2. courses considered equivalent to courses taken later in time;
3. courses precluded for credit by courses taken later in time;
4. courses placed in this category by committee decision.

3.1.11 Maximum Number of Program Elements

In addition to the student's Major(s), the maximum allowed combined number of Minors, Concentrations and Specializations for any student is two. Note that this restriction does not apply to the Co-op Option, *Mention : français* or Streams.

3.1.12 Combined Honours Programs

In some cases, combined honours programs are defined with a single unified major which incorporates the credits from both disciplines. In other cases, requirements are established separately by each discipline and combined according to the registration of the student in a particular combined honours pattern (for example, B.A. Honours). In the latter case, when a particular course satisfies the requirements for both majors, the course will be used to fulfil the requirements for one major and a different course at the same level will be required to satisfy the other major.

3.1.13 Simultaneous and Subsequent Degrees

1. A student who has graduated with a Carleton University degree in a particular program will not be subsequently admitted to the same degree and program. Specifically, students who have graduated with a:
 - a. B.A., B.A.S., B.Co.M.S., B.Sc., B. Econ., B. Cog. Sc. or B.Math. degree may apply subsequently for admission to the same degree if they apply for a different major or, if they graduated with a 15.0

credit degree or Major degree, they apply for an Honours degree with the same major.

- b. B.Eng. or B.I.T. degree may apply subsequently for admission to the same degree only if they apply for a significantly different program. A program with distinct streams constitutes a single program for this rule.
 - c. B.I.D., B.Com., B.I.B., B.C.S., B.Mus., B.H.Sc., B.Hum., B.S.W., B.G.In.S., B.J., B.J.Hum., B.M.P.D. or B.P.A.P.M. may not apply subsequently for admission to the same degree.
 - d. B.J., B.Hum. may not apply to the B.J.Hum., and B.J.Hum. may not apply to B.J. or B.Hum.
2. A student who has graduated with a Carleton University degree that includes a minor will not be subsequently admitted to the same minor.
 3. A student who has successfully completed a post-secondary credential will not be admitted to the B.A. or B.Sc. in Open Studies.
 4. A student who has successfully completed a university degree in a given discipline will not be admitted to a minor in the same discipline in conjunction with subsequent degree studies.
 5. A student will only be admitted to one degree and program at a time. The student's record will show only one active degree and program in any given term. Note that certain Certificates and Diplomas do allow concurrent degree studies.
 6. A Carleton University degree student is not allowed simultaneously to be registered in degree studies at another post-secondary institution without the permission of Carleton University.

3.1.14 Restrictions on Credit for Certain Courses

Some courses may not be used for credit in certain programs. Restrictions may be listed in the course descriptions, the academic regulations for certain degree programs, and/or in this section.

1. Co-operative Education (Co-op) work term and report courses do not count for credit in any degree.
2. In addition, B.A. students in Economics and B.Econ. students will not receive credit for MATH courses below the 1000-level.
3. Students in the B.Mus. degree will not receive credit for MUSI 1106 or MUSI 1107.
4. Students in the B.Com. or the B.I.B. degree will not receive credit for BIT 2001, BIT 2002 or any 0000-level mathematics course.
5. Students in the B.Com. degree will not receive credit for BUSI 3602 or COMP 1001.
6. Students admitted with advanced standing to the B.Com., B.C.S., B.I.B., B.Hum., B.P.A.P.M., B.I.T., B.G.In.S. or B.Eng. degree will not receive credit on admission for courses with a grade below C- taken earlier.
7. For courses excluded from the B.Sc. see the Academic Regulations for the Bachelor of Science Degree section of this Calendar. For courses excluded from the

B.Math. see the Mathematics programs section of this Calendar.

3.2 Academic Progression

3.2.1 Academic Continuation Evaluation for Degree Students

The Academic Continuation Evaluation as described in this section applies to Degree Students. The corresponding process for Special Students is described in Section 6.6 of this Calendar.

Note: in addition to the regulations listed below, some programs specify additional requirements that must be fulfilled. Consult specific program pages in this Calendar for additional information regarding: B.A.S., B.Eng., B.Hum., B.I.B., B.I.D., B.J., B.J.Hum., B.M.P.D., B.Mus., B.P.A.P.M., and B.S.W.

The Academic Continuation Evaluation (ACE) is the end-of-term assessment of a student's status in their degree. The first evaluation is made once 5.5 or more credits have been completed at Carleton University and/or through the University of Ottawa Exchange, and all final grades in a specific term are available. Subsequent evaluations occur at the end of each term provided a course has been completed. A completed course is any course registration, including repeated courses, that results in a grade or notation other than WDN, IP, CTN, or AUD. Courses that result in a notation of CR, NR, SAT, or UNS do not count towards the CGPA. Courses in the category of Courses Set Aside on the Academic Audit will not count toward the evaluation unless taken while on *Academic Warning* (AW), at which time they will be used in the term GPA calculation.

The basis of the evaluation is the student's Overall CGPA. The evaluation is made by comparing the Overall CGPA to the minimum required by the student's program in the specific credit range. The possible outcomes of an Academic Continuation Evaluation (ACE) are as follows:

Eligible to Continue (EC), *Academic Warning* (AW), *Required to Withdraw for Two Terms* (WT), *Eligible to Continue in Non-Honours* (CN), *Continue in Alternate* (CA), *Dismissed from Program* (DP), or *Required to Withdraw for Two Years* (WY).

The status *Eligible to Continue* (EC) signifies that the student's Overall CGPA meets the minimum required for continuation in the program.

The status *Academic Warning* (AW) signifies that the student's Overall CGPA with respect to the academic standards of the program is deficient. The student may continue in the degree but must achieve a term GPA equivalent to the Overall CGPA at the next ACE, required in their program and credit range. In order to clear *Academic Warning* (AW), the student must raise their Overall CGPA to the minimum required. Some programs include additional assessments which may also lead to the status *Academic Warning* (AW); see Section 3.2.7 for information. Clearing *Academic Warning* (AW) may take a student more than one term. *Academic Warning* (AW) does not appear on the official transcript.

The status *Required to Withdraw for Two Terms* (WT) signifies that the student must leave their degree for at least two academic terms. See also Section 3.2.3. *Required to Withdraw for Two Terms* (WT) occurs if at least one of the following conditions applies:

- the student has an Overall CGPA that is less than 1.00;
- while on *Academic Warning* (AW), the student has failed to achieve the minimum required term GPA;
- the student was Admitted with Additional Requirements and has failed to satisfy those requirements.

The status *Eligible to Continue in Non-Honours* (CN) is applied at an Academic Continuation Evaluation (ACE) if the student:

- is in an Honours B.A., B.C.S., B.Cog.Sc., B.Co.M.S., B.Econ., B.G.In.S., B.H.Sc., B.Math., or B.Sc. program;
- would be *Required to Withdraw for Two Terms* (WT) at this ACE due to a low overall CGPA, and;
- meets or exceeds the minimum requirements for *Eligible to Continue in Non-Honours* (CN).

The student's program will be changed to the corresponding non-honours program. The student may apply to change this program within the degree, as long as they would be *Eligible to Continue* (EC) in the subsequent program.

The statuses *Continue in Alternate* (CA) and *Dismissed from Program* (DP) indicate that the student's performance has fallen below a minimum standard and, in consequence, the student is removed from—and cannot be readmitted to—that same program. These ACE statuses are restricted to some professional and limited-enrolment programs where there is high demand and limited space in its required courses. The degrees and programs that use these statuses are: B.Com., B.Eng., B.Hum., B.I.B., B.I.D., B.J., B.J.Hum., B.Mus., and B.P.A.P.M. The statuses *Continue in Alternate* (CA) or *Dismissed from Program* (DP) are assigned if any of the conditions for *Required to Withdraw for Two Terms* (WT) apply, in addition to any conditions set by the program. The status *Continue in Alternate* (CA) is assigned if the student's overall CGPA is at least 1.00. A student with status *Continue in Alternate* (CA) is permitted to continue at the University, and may apply through Admissions Services for admission to another degree or through the Registrar's Office to Special studies. The status *Dismissed from Program* (DP) is assigned if the Overall CGPA is less than 1.00. A student with status *Dismissed from Program* (DP) may apply for admission to Special studies only.

If a student receives a status of *Required to Withdraw for Two Terms* (WT) or *Dismissed from Program* (DP) at an Academic Continuation Evaluation (ACE) in the student's current degree, and they have a previous decision of *Required to Withdraw for Two Terms* (WT) or *Dismissed from Program* (DP) on record in this degree, another degree, or Special studies, then the student will be removed from the current degree with the standing *Required to Withdraw for Two Years* (WY). A student with the status *Required to Withdraw for Two*

Years (WY) is not eligible for any studies at the University—including Special studies—for at least two calendar years. See Section 3.2.3.

3.2.2 Three Attempts of a Course (Engineering)

A student in the Bachelor of Engineering degree may attempt a course no more than three times. An attempt shall include courses in which the student has earned a final letter grade, CR, NR, SAT, or UNS.

Some required courses for Engineering degrees have a prerequisite requirement that a minimum grade be achieved in one or more prerequisite courses. If, for any course required for their engineering degree, a student has not earned the required prerequisite grade necessary for that course **by their third attempt** of the prerequisite course, the student will not be permitted to register in the required course, they can not meet the requirements to graduate, and must leave the degree with the status *Continue in Alternate* (CA) or *Dismissed from Program* (DP).

If **on the third attempt** of a course the student does not achieve a passing grade, the student cannot meet the requirements to graduate (see the Bachelor of Engineering regulations) and must leave the degree with the status *Continue in Alternate* (CA) or *Dismissed from Program* (DP).

3.2.3 Readmission after being Ineligible to Continue

Required to Withdraw for Two Terms (WT), *Required to Withdraw for Two Years* (WY), *Continue in Alternate* (CA), and *Dismissed from Program* (DP) are Academic Continuation Evaluation decisions applied to a particular degree.

- Students who have been *Required to Withdraw for Two Terms* (WT) will be inadmissible to their original degree for a minimum of two terms, and may apply immediately to Special studies or seek admission through Admissions Services to other degrees at the University for which they are eligible.
- Students with a decision of *Continue in Alternate* (CA) may apply immediately as Special students, or seek admission through Admissions Services to other degrees at the University for which they are eligible.
- Students with the decision of *Dismissed from Program* (DP) will be inadmissible to any program for a minimum of two terms and may only study as a Special student.
- Students with the decision of *Continue in Alternate* (CA) or *Dismissed from Program* (DP) will not be permitted to re-apply to their original degree and should choose an alternate degree program to complete their studies.

Students who have been *Required to Withdraw for Two Terms* (WT) and wish subsequently to be re-admitted to their original degree must petition through Admission Services, providing an explanation of the circumstances leading up to the withdrawal, what has occurred during

the period of withdrawal, and the student's new academic goals. See also Section 3.1.9.

Required to Withdraw for Two Years (WY) applies to all studies at the University including Special studies. After a WY decision, students wishing to be considered for readmission to a degree program must wait two years and then make an appeal to the Faculty Committee on Admissions and Studies. When being considered for readmission after a WY decision, students may be required to complete certain specific courses in order to demonstrate a reasonable expectation of success. The CGPA will be based upon successful and unsuccessful credits attempted upon readmission.

3.2.4 The Cumulative Grade Point Average

The Cumulative Grade Point Average (CGPA) is the key assessment tool for graduation and/or eligibility to continue in a degree program. The CGPA is the ratio of the grade points earned on a set of courses to the total credit value of these courses. In calculating the CGPA, the grade points contributed by each course are multiplied by the credit value of the course. For example, A+ is equal to 12.00 grade points. For a 0.5 credit course, it is equal to 6.00 grade points (12/2). The CGPA is truncated to two decimal places (with no rounding).

The Overall CGPA includes all courses that satisfy requirements of the student's program or would have satisfied such requirements if a passing grade had been obtained. In particular, an F grade is included in the calculation until it is removed through course repetition or replacement. When a course is repeated, the best grade is used. Some exceptions for those in the Bachelor of Engineering apply (<https://calendar.carleton.ca/undergrad/undergradprograms/engineering/#regulationstext>). All Carleton credits counting toward advanced standing in the degree program are included in the CGPA calculation. All credits obtained through the University of Ottawa Exchange agreement are included in the CGPA calculation.

Courses with the following grading notations are not included in the calculation of the CGPA: Aegrotat (AEG), Challenge for Credit (CH), Credit (CR), Extra to the Degree (ETD), No Credit for the Degree (NCD), No Record (NR), Satisfactory (SAT), Withdrawn (WDN), Unsuccessful Challenge for Credit (UCH), Unsatisfactory (UNS), or Forfeit.

A CGPA calculated for a program component, such as Major or Core, is calculated in the same way using only the courses in the program element.

3.2.4.1 Term Grade Point Average

The Term Grade Point Average (GPA) is the ratio of the grade points earned on a course or set of courses to the total credit value attempted in an individual term. The Term GPA is calculated on all courses attempted in the term, regardless of whether said courses can be used to satisfy the student's program requirements. Accordingly, these courses can include, but are not limited to: program credits, courses set aside, courses excess to the degree, repeated courses.

3.2.5 Assessment in Program Elements

In conjunction with the Academic Continuation Evaluation (ACE), additional averages are calculated for program elements. A CGPA is calculated over the courses contributing to any Minor, Concentration, or Specialization. Students with a CGPA that is below the minimum required for a Minor, Concentration, or Specialization may be removed from that program element.

3.2.6 Minimum CGPA Requirements

To be *Eligible to Continue (EC)* in a degree program, the standard CGPA requirements used in the Academic Continuation Evaluation are presented in Table 1. Undergraduate degree students who do not meet the minimum requirements presented in Table 1 may be placed on *Academic Warning (AW)* or required to withdraw from their degree (WT, WY). See Section 3.2.1 Academic Continuation Evaluation of the *Academic Regulations of the University*.

Table 1: Standard Minimum CGPA Requirements to be Eligible to Continue (EC)

Program of Study	Fewer than 5.5 credits complete	Between 5.5 and 15.25 credits complete	15.5 or more credits complete	Graduation
Honours	n/a	Overall 4.00	Overall 5.00 (see Note 3 below)	Overall 5.00, Major 6.50
BAS Design	n/a	Overall 4.00	Overall 4.00	Overall 4.00
Engineering	n/a	Overall 5.00	Overall 5.00	Overall 5.00
BID	n/a	Overall 3.50	Overall 4.00	Overall 4.00
15 Credit Non-Honours	n/a	Overall 4.00	n/a	Overall 4.00, Major 4.00
20 Credit Non-Honours	n/a	Overall 4.00	Overall 4.00	Overall 4.00, Major 4.00

Notes:

1. Credits Complete are the course credits earned in the courses the student has completed, with either a passing or a failing grade, that would contribute to the credits required for graduation in the student's program had they been passed. This includes credits obtained through transfer, advanced standing, letters of permission, or exchange. Credits Complete does not include courses from which the student has withdrawn.
2. Certain Honours programs may have different minimum Overall and/or Major CGPA requirements from those indicated above. Programs with exceptions are listed in Section 3.2.7 Additional ACE Information for Certain Degrees of the *Academic Regulations of the University*.

- Students in an Honours program who meet the 15.5 credits complete threshold must refer to Section 3.4.6 Minimum CGPA Requirements for Graduation of the *Academic Regulations of the University* for important information about the Major CGPA assessment.

The standard minimum CGPA requirements for Minors, Concentrations, and Specializations are not formally assessed in the Academic Continuation Evaluation, but may also be used to determine whether a student can remain in a particular Minor, Concentration, or Specialization.

Table 2: Standard Minimum CGPA Requirements for Minors, Concentrations, Specializations

Program of Study	Fewer than 5.5 credits complete	Between 5.5 and 15.25 credits complete	15.5 or more credits complete	Graduation
Honours	n/a	5.50	6.50	6.50
Engineering	n/a	4.50	5.00	5.00
BID	n/a	3.50	4.00	4.00
15 Credit Non-Honours	n/a	3.50	n/a	4.00
20 Credit Non-Honours	n/a	3.50	4.00	4.00

Note: certain Minors, Concentrations, and Specializations may have different minimum requirements from those indicated above. Consult the specific program requirements for information.

3.2.7 Additional Information Concerning Academic Continuation Evaluation for Some Degrees

The standard regulations for Academic Continuation Evaluation are modified for certain degrees. Please see the particular degree for more information.

- Bachelor of Architectural Studies
- Bachelor of Humanities
- Bachelor of Industrial Design
- Bachelor of International Business
- Bachelor of Journalism
- Bachelor of Journalism and Humanities
- Bachelor of Media Production and Design
- Bachelor of Music
- Bachelor of Public Affairs and Policy Management
- Bachelor of Social Work

3.3 Academic Petitions and Appeals

3.3.1 Undergraduate Academic Petitions

The Senate of the University establishes academic rules, regulations and deadlines which are designed to ensure that academic standards are upheld and that all students

are treated fairly and equitably. However, the University does understand that extenuating circumstances beyond a student's control can occur and adversely affect a student's ability to meet academic obligations. In those instances, a student may submit a petition, which is a formal request for accommodation with regard to normal rules, regulations and deadlines of the University. The following procedures are concerned with academic regulations and admission decisions. There is a separate review and appeal process for reconsideration of grades in term work and final examinations (see Sections 3.3.4 and 3.3.5 below). Concerns related to the offering of a particular course are within the jurisdiction of the Dean of the Faculty offering the course.

There are two types of circumstances that might warrant a request for an exception to published rules, regulations or deadlines. One type of petition concerns personal circumstances such as illness, unanticipated occupational commitments, or other unanticipated serious events. The second type concerns whether a rule or regulation has been properly or fairly applied to a student's record.

A student seeking accommodation with respect to an academic regulation, rule or deadline submits a petition in writing to the Registrar's Office. Unless subject to an earlier deadline, petitions must be submitted by the following deadlines:

January 30

- for petitions arising from the fall term

June 30

- for petitions arising from the winter term

September 30

- for petitions arising from the summer session

Students can obtain from the Registrar's Office the required Academic Petition form, information about the procedures to be followed, and details regarding the documentation needed to support a petition. Students seeking reconsideration of an admission decision must submit an application in writing to the Admission Services Office.

3.3.2 Undergraduate Appeals

An appeal is the process by which a student may challenge, in writing, the decision on a petition. Students may initiate an appeal by submitting an Academic Appeal Form to the Registrar's Office. Such appeals must be submitted within 14 days of receiving the decision on the original petition. It is the student's responsibility to ensure that the appeal submission is complete and includes all relevant matters which the committee should consider in rendering its decision. The Senate Undergraduate Studies Committee makes the final decision on an appeal.

3.3.3 Procedural Review

Students may request a procedural review of decisions made by the Senate Undergraduate Studies Committee. The review is initiated by a communication, in writing, to the Clerk of Senate. Procedural review is restricted to confirmation by the Clerk that (i) proper procedures have been followed as set out in the appropriate

approved policy, (ii) that issues of bias have been properly addressed, and (iii) that the decision reached is within the scope of the delegated authority and is consistent with previous practice. A procedural review will not change the decision of an appeal. However, the Clerk will decide whether proper procedures have been followed and establish if any further actions are required.

3.3.4 Informal Appeal of Grade

There may be a number of circumstances in which students will have questions regarding their grades. These questions may be about understanding the grading scheme; about the grade awarded for a specific piece of work, including work that has not been returned; or about the determination of the final grade. Wherever possible, both during the term and after, concerns about the grading of student work should be settled informally between the student and the instructor. As a result of this informal appeal process the original grade may be raised, lowered or left unchanged.

Students have the right to have questions regarding their grades addressed and to view all material, including material that has not been returned such as final examinations. In some cases, the original submitted work will remain in the possession of the University and the viewing of this work may be supervised. In cases where a student has concerns regarding the determination of their final grade, the student will be provided with a list of their grades on all components of the course and a description of how their final grade was calculated.

Students should initiate this process within seven working days of the day on which the official grade in question was made available. The informal appeal process should address the concern within 15 working days of the day on which the grade was made available through Carleton Central.

3.3.5 Formal Appeal of Grade

A student may submit a formal appeal of grade when the informal appeal process has not addressed their concerns. The appeal must be submitted to the Registrar's Office with required supporting documentation, normally within 20 working days of the day on which the grade was made available to the student, or the informal appeal process was completed (if applicable). The resolution of an appeal of grade is the responsibility of the Dean of the Faculty offering the course. The appeal must be specific to one or more graded components of the course and/or the calculation of the final grade.

On receiving a formal appeal from the Registrar's Office, the Faculty Dean may decide not to proceed with the appeal if, in the opinion of the Dean, reasonable grounds have not been established as a basis for the appeal. Circumstances which may result in a decision not to proceed may include, for example, cases where the Dean determines that the informal process has adequately addressed the student's concerns or where the Dean determines that a reasonable expectation of error or bias in the original grade has not been established. If the Dean

decides not to proceed with the appeal, the student will be informed of the reasons for the decision.

In proceeding with an appeal, the Dean may assign reassessment of the work to one or more qualified readers other than the instructor. In this case, the identity of the reader(s) will not be made known to the appellant and the identity of the appellant will not be made known to the reader(s). After due consultation, the Dean, as chief academic officer of the Faculty, will assign the grade. The decision of the Dean is final. As a result of this formal appeal process the original grade may be raised, lowered or left unchanged. The student will be given a concise explanation of the decision.

3.4 Graduation Requirements

2.2.2/3.4.1 Minimum Number of Residency Credits

To be eligible for graduation with a Carleton degree, certificate or diploma, each student must present a certain number of credits earned at Carleton University which have not been presented to fulfil any degree that has been previously awarded, including a degree or degrees at Carleton University. These are referred to as residency credits. Courses taken under the University of Ottawa Exchange Agreement do not count as residency credits.

All degree students must present a minimum of 5.0 residency credits at graduation, with the following exceptions:

The minimum number of residency credits for students in the Dual Degree, B.Eng., B.I.D, B.I.T. and B.A.S. Design program is half of the total number of credits required for the program. The residency requirement for B.A.S. students not in Design is the standard minimum of 5.0 residency credits at graduation.

To obtain a minor, a student must present at least 2.0 residency credits counting toward that minor.

To obtain an undergraduate certificate from Carleton University, students must present residency credits including a minimum of 4.0 credits taken at Carleton. The residency for certificates taken concurrently with a Carleton degree may be satisfied with credits used also to satisfy the degree residency requirement.

To obtain a post-baccalaureate diploma from Carleton University, students must present residency credits including a minimum of 3.0 credits taken at Carleton.

2.2.3/3.4.2 Advanced Credits

The credits presented at graduation that are credits completed at Carleton after admission, credits completed at Carleton within the last ten years for which advanced standing has been granted and credits completed as part of the University of Ottawa Exchange or another formal domestic or international Exchange, must include:

1. For Honours degrees, at least 3.0 credits in the major and at the 3000 level or above;
2. For Combined Honours degrees, at least 1.5 credits in each major and at the 3000 level or above;

- For Major degrees, at least 3.0 credits in the major and at the 2000 level or above;
- For 15.0 credit degrees, at least 3.0 credits at the 2000-level or above and, if applicable, in the major.

3.4.3 Graduation Requirements

In order for students to receive their credential, they must fulfil:

- all the requirements of the department(s), school(s) or institute(s) in which they are taking the program;
- all Faculty regulations;
- all University regulations;
- all financial obligations to the University.

The student is responsible for meeting graduation requirements and is strongly encouraged to discuss their program requirements with the Undergraduate Adviser for their program. The degree audit report (available on Carleton Central) is a guide to be used in consultation with the Undergraduate Adviser to discuss the student's academic progress.

3.4.4 Application for Graduation

Students must apply online for graduation via Carleton Central. Online applications must be completed by the following deadlines:

- for Spring Graduation (June): April 1
- for Fall Graduation (November): September 1
- for Winter Graduation (February): December 1

Visit carleton.ca/registrar for further information regarding graduation.

3.4.5 Automatic Graduation from the University

Students who have completed the requirements for the degree and program in which they are registered will be automatically considered for graduation after three consecutive terms of absence from the University.

3.4.6 Minimum CGPA Requirements for Graduation

Students in an Honours program who have completed 15.5 credits or more, but have a Major CGPA less than 6.00, will be placed in a corresponding non-honours program where applicable, provided they meet the minimum overall CGPA required for continuation. The student may apply to change this program within the degree, as long as they would be *Eligible to Continue* (EC) in the subsequent program. Honours programs with no corresponding non-honours program will be assessed using the program rules reflected in Section 3.2.7 of the *Academic Regulations of the University*.

Note: students in the Bachelor of International Business (Honours) and Bachelor of Commerce (Honours) must refer to the Program Regulations for Business.

Table 3: Standard Minimum CGPA Requirements for Graduation

	Overall	Major(s)	Concentration or Specialization	Minor
Honours Degrees	5.00	6.50	6.50	6.50
Engineering Degrees	5.00	not used	n/a	5.00
Architecture (Design), B.I.D.	4.00	not used	n/a	4.00
15 and 20 Credit Non-Honours Degrees	4.00	4.00	4.00	4.00
BCom Non-Honours Degree	5.00	5.00	n/a	5.00
Post-Baccalaureate Diploma	6.50			

Note: some programs have higher requirements. Consult the specific program requirements for information.

3.4.7 Recognition of High Academic Achievement

Graduating students in any undergraduate degree will have exceptional academic achievement recognized if the student:

- Has completed at least 10.0 credits toward the degree at Carleton University, and:
- For the designation High Distinction, has an Overall CGPA equal to or greater than 10.40;
- For the designation Distinction, has an Overall CGPA less than 10.40 and equal to or greater than 9.80.

These recognitions of exceptional merit will be recorded on the student's transcript and diploma.

3.4.8 Recognition of Study Abroad

Carleton University recognizes students who successfully complete a pattern of study at a non-Canadian university comprising a significant international experience with a notation on both the student's transcript and diploma. To qualify for a notation, the pattern of study must be either an approved pattern of study under a recognized International Exchange program, or an alternate pattern of study approved by the Dean.

The notation *with Study Term Abroad* will be used when the equivalent of 2.0 to 3.5 credits of courses are successfully completed, normally within one term.

The notation *with Study Year Abroad* will be used when the equivalent of 4.0 or more credits of courses are successfully completed, normally within one year.

Academic Regulations for Special Students

6.1 Special Students

Special students may be admitted to a degree program if their academic achievement at Carleton University indicates a reasonable probability of future academic success. Previous post-secondary studies at other institutions will also be taken into consideration at the time the application for admission is evaluated. Students with previous, unsuccessful post-secondary studies should contact the Admissions Services before attempting to qualify for admission on the basis of studies as a Special student.

6.2 Application

Applications to study as a Special student are submitted online to the Registrar's Office at <https://carleton.ca/registrar/special-students/>. Applications must include transcripts from the most recent study (high school, post-secondary), as well as the application fee. Documentation provided must satisfy the English language requirements of the University (see 6.3 below).

6.3 Proficiency in English

Special students must satisfy the University English language proficiency requirement listed in the Admissions Regulations section.

6.4 Course Selection

Special students are eligible to register in most courses provided they meet prerequisites. Space in certain courses may be limited and some courses are restricted to degree students. Restrictions and prerequisites are listed in the Class Schedule and the Calendar course description.

Special students planning on applying for admission to a program in the future are advised to note the specific Faculty requirements for course selection and the admission requirements for Special students as listed in this Calendar.

6.5 Course Load

Special students may enrol in a maximum of 1.0 credit in each of the summer, fall, and winter terms.

Special students who have completed at least 1.0 credit taken at Carleton University and have an Overall CGPA of at least 7.0 may petition to the Registrar's Office to register in a maximum of 1.5 credits in each of the summer, fall, and winter terms. Permission from the Registrar's Office is required.

Special students may enrol in 2.5 credits in each of the fall and winter terms, and in 2.0 credits in the summer term, if the student holds an undergraduate degree from a recognized post-secondary institution and presents official documentation to confirm their degree.

Students studying with an official approved Letter of Permission from a recognized post secondary institution

will be permitted to enrol in the course load indicated on their Letter of Permission.

6.6 Academic Continuation Evaluation

Academic Continuation Evaluation (ACE) for Special students is carried out at the same time as for degree students. Special students receive their first Academic Continuation Evaluation once they have completed 2.0 credits since the most recent admission to Special studies. Subsequent evaluations occur at the end of each term provided a course has been completed. The result of an Academic Continuation Evaluation is that the student is *Eligible to Continue* (EC), on *Academic Warning* (AW), or is *Required to Withdraw for Two Terms* (WT).

The status *Eligible to Continue* (EC) signifies that a Special student's Overall CGPA meets or exceeds the minimum 3.00 required for continuation.

A Special student is considered to be on *Academic Warning* (AW) at an Academic Continuation Evaluation if:

- their Overall CGPA is at least 1.00 but less than 3.00, and they were *Eligible to Continue* (EC) before the evaluation;
- the previous evaluation was *Academic Warning* (AW), and the Term GPA for the current evaluation is 3.00 or greater but the Overall CGPA is less than 3.00.

A Special student is *Required to Withdraw for Two Terms* (WT) at an Academic Continuation Evaluation if:

- they are on *Academic Warning* (AW) and do not achieve a Term GPA of 3.00; or,
- their CGPA is less than 1.00 at the time of any Academic Continuation Evaluation.

A Special student who is *Required to Withdraw for Two Terms* (WT) may not return to Special studies for two terms.

6.7 Special Students Enrolling in Graduate-Level Courses

Anyone wishing to enrol in a graduate-level course as a Special student must obtain permission from the appropriate department. Requests are submitted through the registration system as a Course Override Request. Anyone considering pursuing a graduate degree is urged to contact the Faculty of Graduate and Postdoctoral Affairs prior to registration as a Special student.

Academic Regulations for Students with Disabilities

8.1 Academic Regulations for Students with Disabilities

Carleton University is strongly committed to providing access and accommodation for all individuals with identified and duly assessed disabilities. The University has a Senate-approved policy on academic accommodation that forms part of its Human Rights Policy. This policy should be consulted for further information and is available at: carleton.ca/equity. The policy promotes efforts to accommodate students with disabilities so that

they will have the opportunity to meet learning objectives and be fairly evaluated in their performance. In no case, however, does academic accommodation negotiate away, lower, or remove the academic standards and learning objectives of any course or program, rule, regulation, or policy at the University.

The Paul Menton Centre for Students with Disabilities is the designated unit at the University for assisting the Carleton community in integrating persons with disabilities into all aspects of Carleton's academic and community life. The Paul Menton Centre provides assessment of academic accommodation, advises students on strategies to open a dialogue with instructors and acts as consultant, facilitator, coordinator and advocate in this area for all members of the University community.

The Paul Menton Centre provides individualized support services, based on appropriate and current documentation, to persons who are deaf or hard of hearing, with learning disabilities, attention deficit disorder (ADD), visual impairments, head injuries, physical disabilities including mobility impairments, or who have psychiatric, other medical or non-visible disabilities.

Students are responsible for applying for special services by making an appointment with the appropriate coordinator at the Paul Menton Centre. All requests will be considered on the basis of individual need. Students are advised to come to the Centre early in the term to discuss service requests.

Examination accommodations for all tests and examinations (in-class, CUOL, or formally scheduled) must be arranged by specific deadline dates. Please consult the Paul Menton Centre for a list of deadlines. Note that it may not be possible to fulfil accommodation requests received after the specified deadlines.

Academic Regulations for Students with Religious Obligations

9.1 Academic Regulations for Students with Religious Obligations

Carleton University accommodates students who, due to religious obligation, must miss an examination, test, assignment deadline, laboratory, or other compulsory event. The University has a Senate-approved policy on religious accommodation that forms part of its Human Rights Policy, available at: carleton.ca/equity.

Accommodation will be worked out directly and on an individual basis between the student and the instructor(s) involved. Students should make a formal written request to the instructor(s) for alternative dates and/or means of satisfying requirements. Such requests should be made during the first two weeks of any given academic term*, or as soon as possible after a need for accommodation is known to exist, but in no case later than the penultimate week of classes in that term. Instructors will make reasonable accommodation in a way that shall avoid academic disadvantage to the student.

Students unable to reach a satisfactory arrangement with their instructor(s) should contact the Director of Equity

Services. Instructors who have questions or wish to verify the nature of the religious event or practice involved should also contact this officer.

*When a student's presence is required prior to the date on which classes begin (e.g. for field trips or orientation activities), any student who cannot meet this expectation of attendance for reasons of religious accommodation should notify the Registrar's Office in advance.

Examinations

4.1 Undergraduate Examination Regulations

Students writing tests and examinations should be aware of the rules governing examination conduct. These rules include those listed in the Academic Integrity section of this Calendar and information about policy and procedures for writing examinations distributed at the final examination.

For examinations scheduled during the official examination period, it may be necessary to schedule examinations during the day for classes held in the evening and vice versa, or on Saturday and Sunday.

All tests and examinations are subject to the following rules:

1. Tests or examinations given in class may not exceed the time allotted for the class;
2. The schedule for any term tests or examinations to be held outside class time must be communicated in the course outline. Students who are unable to write during this scheduled time must be accommodated before the last day of classes.
3. If there is a final examination in the summer term, it will be held during the official examination period;
4. If there is a final examination or an end-of-term examination in a multi-term course, this examination will be held in the official examination period;
5. No summative tests or final examinations may be held during the last two weeks of fall or winter terms, or during the last week of each half of the summer term. Please note that practical exams, where the material cannot be tested during formal examination period, are exempt from this rule provided (i) students are made aware of the practical exam requirement at the start of the term via the course outline, and (ii) the examination contributes to no more than 15% of the final grade. If provision (i) above is met but the examination comprises more than 15% of the final grade, Dean approval is required prior to informing students via the course outline.
6. Formative tests or examinations may be held during the last two weeks of classes of fall or winter terms, or during the last week of each half of the summer term, provided they do not total more than 15% of the final grade. The purpose of formative tests or examinations is to provide feedback to students on a component of the course content.
7. No tests or examinations may be held between the end of classes in a term and the beginning of formally scheduled examinations;

8. Normally, final take-home examinations in any term will be assigned on or before the last day of classes and are due on the last day of the official examination period. Final take-home examinations not set according to this normal practice must be formally scheduled by Scheduling and Examination Services and are subject to overload rules. In all cases the rules for take-home examinations must be well communicated to students by course instructors.
9. Students are not required to write with an exam conflict (defined as two examinations scheduled at the same time) nor in an exam overload, defined as (i) 3 or more examinations scheduled in 3 consecutive time slots, (ii) 4 or more examinations scheduled in 5 consecutive time slots, or (iii) 5 or more examinations scheduled in 7 consecutive time slots, where a time slot refers to the morning, afternoon, or evening time slot on an exam day.

4.2 Examination Rules of Conduct

From the *Carleton University Academic Integrity Policy*, <https://carleton.ca/senate/wp-content/uploads/Academic-Integrity-Policy1.pdf>:

The University is committed to ensuring fairness and consistency in the completion of examinations. As part of this commitment, students are required to follow proper examinations procedures. A student who commits a violation of this Policy on an examination, test, or take-home examination, or obtains or produces an answer or unfair advantage, are subject to sanction under this Policy. This includes but is not limited to:

1. bringing to the examination/test room any unauthorized material;
2. writing an examination or part of it, by consulting any person or materials outside the confines of the examination room without permission to do so;
3. intentionally leaving answer papers exposed to view;
4. attempting to read other students' examination papers;
5. speaking to another student (even if the subject matter is irrelevant to the test);
6. disrupting or delaying a test or examination;
7. failing to comply with the instruction of a University official administering an examination.

Further to the University's Academic Integrity Policy statement, a violation of the policy may also occur by breaching one of the Policy and Procedures for Writing Examinations.

Please visit the University's Human Rights Policy and Offenses of Conduct sections of this Calendar for more information.

4.3 Deferred Final Examinations

4.3.1 Deferred Final Examinations

Students who are unable to write a final examination because of a serious illness/emergency or other circumstances beyond their control may apply for accommodation. Normally, the accommodation for a missed final examination will be granting the student the opportunity to write a deferred examination. In

specific cases when it is not possible to offer a deferred examination, and with the approval of the Dean, an alternate accommodation may be made.

The application for a deferral must:

1. be made in writing to the Registrar's Office no later than three working days after the original final examination or the due date of the take-home examination; and,
2. be fully supported by appropriate documentation and, in cases of illness, by a medical certificate dated no later than one working day after the examination, or by appropriate documents in other cases. Medical documents must specify the date of the onset of the illness, the (expected) date of recovery, and the extent to which the student was/is incapacitated during the time of the examination. The University's preferred medical form can be found at the Registrar's Office here.

4.3.2 Missed Deferred Examinations

Students will not be given a deferral of a deferred examination.

Students granted a deferred final examination who are then unable to write the deferred final examination will receive the earned grade in the course (which may be an F).

Students granted a deferred final examination who are then unable to write the deferred final examination due to properly documented personal or medical conditions may appeal to receive one of the notations *Aegrotat* (AEG) or *Withdrawn* (WDN) for the course as assigned by the appropriate appeal committee. (Students may not petition for one of these alternate notations if they attended the deferred examination but did not complete it for personal or medical reasons unless the circumstances satisfy the requirements for Early Departure from Final Examinations in section 4.3.3 below.) NOTE: If a student would be unable to pass the course as specified in the course outline, regardless of the result of a final examination, a grade of F may still result. If a student is passing the term work and is able to pass the course as specified in the course outline, based on the results of a final examination, then a withdrawn (WDN) may be granted.

Aegrotat standing may be considered for applicants for deferred finals but will be granted only if a substantial proportion of the term work has been completed and is of high quality. AEG denotes a pass standing.

Students who have obtained approval for a deferred examination in a Carleton University Online (CUOL) course will have access to course materials after the end of the academic term of the original course.

Deferred final examinations are scheduled in the time period approved by Senate. Please refer to the Academic Schedule for deferred examination dates.

4.3.3 Early Departure from Final Examinations

Students are expected to assess their medical situation/ability to write an examination prior to entering the examination room. Students who do not write a final

examination because of illness or other circumstances beyond their control may apply to write a deferred examination. Section 4.3.1 of this calendar outlines the regulations governing deferral of final examinations.

Students are expected to complete a final examination once begun. If the student experiences a significant deterioration of health while the examination is in progress, it may be possible to submit a petition to apply to write a deferred examination.

A significant deterioration during an exam is a situation whereby the student requires immediate and/or emergency medical attention. In such circumstances, a student will be required to seek appropriate documentation to confirm that the medical situation caused significant, acute symptoms during the examination that completely prohibited the student from completing the exam, describing the specific impacts on the student's ability to continue the exam.

A student must then petition to the Registrar's Office within three (3) business days of the examination with appropriate supporting documentation.

Minor illnesses and ongoing chronic illnesses under medical management will normally not be considered valid grounds for granting a deferred final examination.

4.4 Deferred Term Work

In some situations, students are unable to complete term work because of illness or other circumstances beyond their control, which forces them to delay submission of the work.

1. Students who claim illness, injury or other extraordinary circumstances beyond their control as a reason for missed term work are held responsible for immediately informing the instructor concerned and for making alternate arrangements with the instructor and in all cases this must occur no later than three (3) working days after the term work was due. The alternate arrangement must be made before the last day of classes in the term as published in the academic schedule. Normally, any deferred term work will be completed by the last day of term. In all cases, formative evaluations providing feedback to the student should be replaced with formative evaluations. In the event the altered due date must extend beyond the last day of classes in the term, the instructor will assign a grade of zero for the work not submitted and submit the student's earned grade accordingly; the instructor may submit a change of grade at a later date. Term work cannot be deferred by the Registrar.
2. In cases where a student is not able to complete term work due to illness or injury for a significant period of time/or long term, the instructor and/or student may elect to consult with the Registrar's Office (undergraduate courses) or Graduate Registrar (graduate courses) to determine appropriate action.
3. If a student is concerned the instructor did not respond to the request for academic accommodation or did not provide reasonable accommodation, the student should consult with the department/

school/institute chair/director. If a mutually agreeable accommodation to complete course requirements prior to the course grade submission deadline cannot be achieved, the Associate Dean will become involved. If academic accommodation is not granted, and the student receives word **after** the academic withdrawal deadline, the student may submit a petition to the Registrar's Office (undergraduate courses)/Graduate Registrar (graduate courses) for a final grade of WDN (Withdrawn) in the course(s). If academic accommodation is not granted, and the student receives word **prior** to the academic withdrawal deadline, the student may elect to withdraw from the course(s).

4. Furthermore, if academic accommodation is granted, but the student is unable to complete the accommodation according to the terms set out by the instructor as a result of further illness, injury or extraordinary circumstances beyond their control, the student may submit a petition to the Registrar's Office (undergraduate courses)/Graduate Registrar (graduate courses). Please note, however, that the course instructor will be required to submit an earned final grade and further consideration will only be reviewed according to established precedents and deadlines. (More information: Undergraduate | Graduate).

Grading

5.1 Credit

To obtain credit in a course, students must satisfy the course requirements as published in the course outline.

5.2 The Course Outline

The instructor is required to provide a formal statement to students called the Course Outline. The course outline must be made available to all Carleton students registered in that course, on or before the required date found in the schedule for The Academic Year, normally one week prior to the start of a term.

The course outline must specify:

1. Complete calendar description.
2. Proposed list of topics to be covered.
3. Mandatory Required Materials to be acquired.
4. All the elements that will contribute to the cumulative grade earned and the overall approximate grade breakdown for the course. The elements and grade breakdown may initially be approximate, but are normally confirmed no later than the last day of registration for the term. If faculty deviate from section 5.4 on the grading system, the grading system that will be used must be clearly indicated. If additional requirements beyond the cumulative grade earned must be satisfied in order to pass the course, this should be clearly identified in the course outline.
5. Due dates for major course elements should be indicated. The dates may be tentative initially, but are normally confirmed no later than the last day of registration for the term. If changes to due dates are required students should be given at least two weeks

notice. Final scheduled exam dates are excluded from the information provided, and will be presented at a later date in the term.

6. TA information, as available.
7. Any required time commitments occurring outside of the formally scheduled lectures, tutorials, labs and discussion groups. Changes may be required but students should be given at least two weeks notice. These time commitments are specific to course requirements and do not imply study time or group work, for example.
8. The outline must also include/reference all University policies governing academic accommodation.

5.3 Early Feedback Guideline

Providing feedback to students on academic work, completed or in progress, is an integral part of teaching and learning in that it allows students to measure their understanding of material, the success of their learning strategies, and their progress on learning objectives. While the nature and frequency of such feedback will vary with the course and level, Carleton University is committed to providing students with appropriate and timely feedback on their work. Accordingly, wherever possible, and especially in first- and second-year courses, instructors are urged to include academic work that is assigned, evaluated and returned prior to the 25th teaching day of each term. More generally, all instructors are urged to include academic work that is assigned, evaluated and returned prior to the 40th teaching day of each term.

The spirit of this guideline should be followed during the summer term. In particular, all instructors are urged to include academic work that is assigned, evaluated, and returned at least two days prior to the last day to withdraw from the course in the Early, Late, or Full Summer term.

Course outlines should provide an indication of approximately when the first graded piece of work will be returned to students. In cases where a course does not lend itself to early feedback, this should be clearly noted on the course outline.

5.4 Grading System

Standing in a course is determined by the course instructor, subject to the approval of the faculty Dean. Standing in courses will be shown by alphabetical grades. The system of grades used, with corresponding grade points and the percentage conversion, is listed below. Grade points indicated are for courses with 1.0 credit value. Where the course credit is greater or less than one credit, the grade points are adjusted proportionately.

Grade	Point Equivalence	Percentage Conversion
A+	12	90-100
A	11	85-89
A-	10	80-84
B+	9	77-79
B	8	73-76
B-	7	70-72
C+	6	67-69

C	5	63-66
C-	4	60-62
D+	3	57-59
D	2	53-56
D-	1	50-52
F	0	less than 50

In cases where the final examination is not written and was not explicitly a requirement to successfully complete the course, the cumulative grade earned on term work without the missing examination will be assigned.

If the grade conversion deviates from the percentage conversion presented above, the faculty member must notify the class in the course outline.

Other grades and notations in current use by the University are as follows:

Notation	Description
AEG	Aegrotat. Pass standing is granted under special circumstances by an academic appeal committee, in response to an application from or on behalf of a student, on the basis of course work when no further assessment is considered feasible. AEG has no impact on the CGPA calculation.
AUD	AUD. No Academic Credit, no impact on CGPA. Audit indicates the course was taken for interest and not for academic credit.
CEX	Current International Exchange. An interim notation.
CH	Credit granted under challenge for credit policy. CH has no impact on the CGPA calculation.
CLP	Current Letter of Permission. An interim notation.
CR	Credit granted for a passed course under the First Year Grading Policy (see Section 5.4.3). CR has no impact on the CGPA calculation.
CTN	Continuing. No academic credit and no impact on the CGPA. Assigned by the Registrar's Office to the first half of a course taught consecutively over two terms.
CUO	Current University of Ottawa Exchange. An interim notation.
CUR	Current registration. An interim notation assigned by the Registrar's Office to indicate the student is currently registered in the course.
DEF	Deferred Final Examination and/or final course work. An interim notation administratively assigned by the Registrar's Office upon approval of a request to write a deferred final examination or defer submission of final course work. DEF must be replaced by a final grade within the prescribed time or be replaced with F.
F	Failure. The grade of F is assigned when the student has failed to meet the conditions of "satisfactory performance" defined in the Course Outline. F carries 0.0 grade points.

GNA	Grade not available. An interim notation administratively assigned by the Faculty when a grade is not available, and must be replaced with a final grade.	DNC	Did not complete the course. No academic credit or impact on the CGPA calculation. In credit courses, the notation DNC is assigned by the appropriate appeal committee in the case of a student, who, having achieved satisfactory performance during the term, and has been granted a deferred final examination in the course then is unable to write the deferred examination due to continued and documented personal or medical reasons. In the case of audited courses, DNC is assigned by the instructor when the student has registered to audit the course and has not satisfied the requirements for successful audit.
IP	In Progress – a notation (IP) assigned to a course by a faculty member when: At the undergraduate level, an undergraduate thesis or course has not been completed by the end of the period of registration. At the graduate level, a graduate thesis, research essay, independent research project or comprehensive examination has not been completed by the end of the period of registration. The IP notation may also be used at the graduate level when a research seminar has not been completed by the end of the period of registration provided the research seminar has been approved by Graduate Faculty Board as being eligible for the use of this notation. In the case of re-registration in any of the above courses, the IP notation will remain; a final grade will normally be assigned in the final period of registration. Where there is no re-registration in any of the above courses, the IP notation must be replaced with an appropriate notation or grade within the prescribed time period, or be replaced by a notation of WDN.	EXC	Satisfactory performance on International Exchange, EXC has no impact on the CGPA calculation.
NR	Denotes a failed course under the First Year Grading Policy (see Section 5.4.3). The notation does not appear on the transcript but is retained for internal purposes as required. NR has no impact on the CGPA calculation.	FND	Failure with no deferred final examination allowed. The grade FND is assigned only when the student has failed the course on the basis of inadequate term work as specified in the Course Outline. FND carries 0.0 grade points.
SAT	Satisfactory performance in an option or course taken at Carleton, or on Letter of Permission or an approved exchange. SAT has no impact on the CGPA calculation.	FNS	Failure without access to a supplemental examination because of incomplete term work or unacceptably low standing. No academic credit.
UCH	Unsuccessful attempt for CH. UCH has no impact on the CGPA calculation.	FWS	Failure with access to supplemental examinations.
UNS	Unsatisfactory performance in an option or course taken at Carleton, or on a Letter of Permission or approved exchange. UNS has no impact on the CGPA calculation.	INC	Incomplete may be assigned to a Graduate course in which the student has been approved to submit an assignment after the final deadline date. Incomplete must be replaced with a letter grade within forty days of the end of classes. If the Incomplete is not changed to a letter grade within forty days of the end of classes, the Incomplete will be changed to a grade of F, which will remain as a permanent entry on the student's record. In exceptional cases students may petition the Dean of the Faculty of Graduate and Postdoctoral Affairs to have the Incomplete remain on the student record. For circumstances that go beyond the forty-day period (i.e. medical), students may apply for a deferral (refer to Special/Deferred Final Examinations, Section 9.3).
WDN	Withdrawn. Students may withdraw on or before the academic withdrawal deadline (noted in the Academic Year section of the Calendar). No academic credit, no impact on the CGPA. WDN is a permanent notation that appears on the official transcript for students who withdraw after the full fee adjustment date in each term (also noted in the Academic Year section of the Calendar).	LOP	Satisfactory performance on Letter of Permission, LOP has no impact on the CGPA calculation.
		P	Pass.
		PWD	Pass With Distinction.

The following notations are no longer in use by the University:

Notation Description

ABS Absent from a required final examination. ABS is assigned only when the student is absent from the required final examination and has achieved satisfactory performance during the term as specified in the course outline. ABS is equivalent to an F and it carries 0.0 grade points.

5.4.1 A course is considered to be *completed* when the course registration results in a notation or grade other than WDN, IP, CTN, CUR, AUD, CEX, CLP, DEF, GNA, or CUO.

5.4.2 A course is considered to be *successfully completed* if the course is completed with a passing grade, SAT, CH, AEG, or CR.

5.4.3 First Year Grading Policy

For students entering their first year of studies at Carleton with no previous post-secondary studies the following grading policy shall apply during the **first two terms** of registration in a Carleton undergraduate degree program:

1. Any F or UNS grades earned in any course taken will be automatically converted to NR (No Record). **Note:** NR will not be recorded on the transcript but will be retained for internal use and accessible for other purposes as required.
2. Any passing grades earned in any course may be converted to a CR (Credit), at the request of the student, to a maximum of 2.0 credits during the first two terms. Students must request conversion prior to the last day of registration for the following term. **Note:** CR will be recorded on the transcript, and the earned grade will be retained for internal use and accessible for other purposes as required.
3. All non-financial WDNs of courses taken under this policy will not be recorded on the transcript but will be retained for internal use and accessible for other purposes as required.

5.5 Change of Grade

Final grades are posted after grades are approved. Once posted, final grades may only be changed through informal or formal appeals of grade processes (see Sections 3.3.4 and 3.3.5 of the *Academic Regulations of the University*).

Any instructor-initiated changes beyond the formal and informal appeal process must be completed by the instructor and approved by the faculty dean, or designate within 6 months of the last day of the exam period.

Any changes beyond this 6 month period must be initiated after consultation with the faculty dean or designate.

Unless an appeal has been initiated prior to the awarding of a degree, grades that have been used towards the awarding of a degree are not eligible for a change of grade.

Registration, Evaluation and Student Records

2.1 Registration

2.1.1 Permission to Register

To be eligible to register for an academic term, students must meet the following requirements:

1. Students new to Carleton must be formally admitted to a program OR Special student studies;
2. Returning students must be academically eligible to continue in their programs;
3. There must be no outstanding fees on the student account with the University;
4. The student must not have been suspended from the University for disciplinary reasons;
5. International students must be enrolled in or have received permission for exemption from the University Health Insurance Plan (UHIP).

Registration information for the fall and winter terms is emailed to newly admitted and returning students by May 1 (carleton.ca/registration). Information regarding summer term is available from the Registrar's Office by February 1 (carleton.ca/summer).

2.1.2 Full- and Part-time Study

When responding to a legitimate request from an external agency that has not supplied its own definition, the following definitions are used:

1. A *full-time undergraduate student* is one who is registered in at least 1.5 credits per academic term.
2. A *full course load* is the normal maximum course load as defined by the student's program and is evaluated term by term.

2.1.3 Course Selection and Registration

Course selection must be completed according to the requirements of the faculty or school and major department(s) in which the student is registering. Students should seek the advice of their program advisor, academic unit, or the Academic Advising Centre.

Students planning to undertake professional training beyond their undergraduate studies should ensure that their undergraduate programs meet the requirements for admission to, or registration in, their intended post-graduate program.

Students are not permitted to register in course timetable conflicts.

All course selection and course change activity within the published deadlines (adds, drops, change of section) is completed using Carleton Central at central.carleton.ca. These activities are limited by deadlines set out in the Academic Year section of this Calendar. It is the student's responsibility to understand and meet these deadlines.

2.1.4 Course Load

In most undergraduate programs, the normal course load is the equivalent of 2.5 credits in each of the fall and winter terms and the equivalent of 1.0 credit in each of the early and late periods of the summer term. In some programs, higher course loads may apply. Full-session courses are considered to have their credit weight evenly distributed over the terms. For example, a two-term 1.0 credit course is considered to contribute 0.5 credit to course load in each term.

A student is registered in a course overload if the student is registered in more credit equivalents per term than the normal load for their program. Students with an Overall CGPA of 7.00 who have completed a minimum of 4.0 credits at Carleton may choose to register in a course overload, to a maximum of 0.5 credit above the normal course load for their program in each of the fall and winter terms and in either the early or late period of the summer term. Students requiring permission for course overloads should contact the Registrar's Office.

2.1.5 Payment of Fees

A student is responsible for all tuition and other fees resulting from registration in any and all courses. The

student remains responsible for paying this debt whether or not the student attends or participates in the class or classes unless they withdraw within the published deadline set out in the Academic Year section of this calendar. Student Accounts may be viewed through Carleton Central and are the administrative responsibility of the Business Office.

For fee payment policies and deadlines, please visit the Student Accounts website.

2.1.6 Withdrawal

Students are responsible for formally withdrawing from a course or courses within the published deadlines. Ceasing to attend or participate in classes, or informing an instructor of intent to withdraw, does not constitute withdrawal. Withdrawal is completed by using Carleton Central at central.carleton.ca. The official date of withdrawal from the course(s) is the date on which the student successfully completes the necessary withdrawal action.

Students must withdraw from a course or courses on or before the appropriate last date for withdrawal as indicated in the Academic Year section of this Calendar. Withdrawal is not permitted after the published deadlines (noted in the Academic Year section of the Calendar each term). Students who withdraw after the full fee adjustment date in each term and by the academic withdrawal deadline will receive the grading notation of WDN on their transcript for the course(s) from which they withdraw. Please consult section 5.4 *Grading System* of this Calendar for more information.

Withdrawal activity may affect academic standing as prescribed by regulations governing the program, as well as status with the University (full-time or part-time). Consult the Registrar's Office for information and guidance. A student who withdraws from a course retains no academic credit for any part of that course. Withdrawing from a course may have serious consequences for scholarships, OSAP and other student financial support programs. Students are advised to consult the Awards Office for guidance.

Fee adjustments for students who are withdrawing from a course, or courses, will be calculated as of the date of successful completion of withdrawal via Carleton Central.

2.1.7 Deregistration

After due process, the University may deregister a student under the following circumstances:

1. if it is determined that the student does not meet all of the requirements for permission to register as set out in 2.1.1 above;
2. if it is determined that an applicant for admission has, in the process, provided false or incomplete information;
3. if the student does not have - or, when requested, present proof of - the course prerequisite(s);
4. if the student is registered in a course timetable conflict;

5. if it is determined that the student has not met the additional admission requirements, including satisfying the English language proficiency requirements of the University;
6. if it is determined that the student has not met the requirements of a conditional offer of admission;
7. if the student is not properly registered in the two terms of a full-session course.

2.1.8 Auditing Student

An auditing student is defined as a student who attends a course for interest and not for credit. Auditing students may typically only enrol in lecture or seminar courses. Formal registration is required but the student does not receive academic credit for the course. Permission to audit a course is required from the instructor and students may be required to satisfy all registration requirements. Permission will also be subject to capacity, and generally will not be provided until after courses commence. The student may attend classes but will not receive formal evaluation and/or grading on any submitted material. The student should discuss with the instructor the conditions and expectations under which an auditing student may be permitted to participate, including attendance and participation in class discussion and group work, and the submission of any material.

A request to change course registration from audit to credit status, or credit to audit, must be received by the Registrar's Office no later than the last day to add a course (of that duration) in the term. Students must satisfy all registration requirements to register in the course for academic credit. Students may not retroactively appeal to change the registration status from audit to credit, but may subsequently re-register in the course for credit. Graduate students are limited to a maximum of 1.0 course-weight audit registration per program.

2.1.9 Credit for Closely-related Courses

The University recognizes three distinct close relationships between courses.

Courses *preclude* credit for each other if they contain sufficient content in common that credit may not be earned for more than one of the courses. Should two or more courses be taken that preclude each other, only the most recent attempt will be available for program credit; the remaining earlier attempt(s) will be forfeited. Courses that preclude each other are not necessarily considered equivalent and may or may not be interchangeable in fulfilling degree requirements.

Courses are *equivalent* if the appropriate academic unit(s) consider the content of the courses to be sufficiently similar that either course may be used to fulfil a program requirement. Courses designated as equivalent to each other cannot both count for credit: credit is retained only for the most recent attempt. Examples of equivalent courses arise frequently in advanced standing and when new curriculum is introduced.

Two courses are *cross-listed* if they are the same course listed under two different subject codes, usually by two different academic units.

In all cases, credit will be given for only one of the courses in any equivalent, precluded or cross-listed pair. Students planning to enrol in such courses are advised to consult with their academic advisor in advance of registration to ensure that the course number under which they will be enrolling is appropriate to their program. Changes to resolve incorrect course selection due to equivalence, preclusion or cross-listing may not be made after the last day for course changes in the term (see the Academic Year section of this Calendar).

2.1.10 Two-term Courses

Certain courses may be taught over two academic terms. Students are registered in the same section of the course, and any linked components, in both terms. Changes cannot be made after the last day for course changes. These courses will be clearly identified in the registration information. The most common example is a 1.0-credit course taught over the fall and winter terms.

In place of a grade, the first term course will be assigned the notation *CTN*. The second term course will be assigned the final grade for the entire course. Credit will be given only for the complete course taught over two consecutive terms in corresponding sections. No partial credit will be given for part of the course.

2.1.11 Challenge for Credit

Challenge for credit is a Carleton University policy that enables students to gain undergraduate academic credit for their own learning and experience through work and related professional experience. It is not intended to overlap in scope with transfer of credits or admission with advanced standing.

This policy gives the student the opportunity to be examined on, and receive credit for, a recognized Carleton course without meeting the normal requirements of registration, attendance, and instruction. Students wishing to challenge for credit should inquire at the Registrar's Office and provide documentation to support the challenge. If the academic department is satisfied that the student has adequate experience and learning related to the course in question, it sets an appropriate examination. If the student is successful in the examination, the course is credited to his or her academic record.

Not all courses offered at the university are open to challenge for credit. Students must register in the course with the status of challenge and fees apply. Students seeking more information should contact the Registrar's Office.

Challenge for credit is available only to students formally admitted to and registered in a program leading to a degree, diploma or certificate. Special students are not eligible to apply for challenge for credit. Students may challenge for credit in a course only if they are *Eligible to Continue* (EC) in their program. A student may not challenge for credit more than once in the same course.

Students who challenge for credit are not permitted access to the course materials available to registered students.

A successful challenge for credit is denoted on the student's record by the notation CH. An unsuccessful challenge attempt is denoted by UCH. These notations have no impact on the CGPA calculation. Credits obtained by challenge may not be used to satisfy the residency requirement for the student's degree program or major discipline (see Section 2.2.2 or 3.4.1).

2.2 Credit Requirements and Limitations

2.2.1 Maximum Credits Below the 2000 Level

A student may count a maximum of 7.0 credits below the 2000 level toward fulfilment of graduation requirements.

Credits in excess of this limit will be set aside as Extra to the Degree (ETD), No Credit for the Degree (NCD) or Forfeit. This allows students to increase their CGPA by pushing out low grades below the 2000 level through replacement by higher grades at the same level.

2.2.2/3.4.1 Minimum Number of Residency Credits

To be eligible for graduation with a Carleton degree, certificate or diploma, each student must present a certain number of credits earned at Carleton University which have not been presented to fulfil any degree that has been previously awarded, including a degree or degrees at Carleton University. These are referred to as residency credits. Courses taken under the University of Ottawa Exchange Agreement do not count as residency credits.

All degree students must present a minimum of 5.0 residency credits at graduation, with the following exceptions:

The minimum number of residency credits for students in the Dual Degree, B.Eng., B.I.D, B.I.T. and B.A.S. Design program is half of the total number of credits required for the program. The residency requirement for B.A.S. students not in Design is the standard minimum of 5.0 residency credits at graduation.

To obtain a minor, a student must present at least 2.0 residency credits counting toward that minor.

To obtain an undergraduate certificate from Carleton University, students must present residency credits including a minimum of 4.0 credits taken at Carleton. The residency for certificates taken concurrently with a Carleton degree may be satisfied with credits used also to satisfy the degree residency requirement.

To obtain a post-baccalaureate diploma from Carleton University, students must present residency credits including a minimum of 3.0 credits taken at Carleton.

2.2.3/3.4.2 Advanced Credits

The credits presented at graduation that are credits completed at Carleton after admission, credits completed at Carleton within the last ten years for which advanced standing has been granted and credits completed as part of the University of Ottawa Exchange or another formal domestic or international Exchange, must include:

1. For Honours degrees, at least 3.0 credits in the major and at the 3000 level or above;
2. For Combined Honours degrees, at least 1.5 credits in each major and at the 3000 level or above;
3. For Major degrees, at least 3.0 credits in the major and at the 2000 level or above;
4. For 15.0 credit degrees, at least 3.0 credits at the 2000-level or above and, if applicable, in the major.

2.2.4 Transfer of Credit Prior to Admission

When a student is considered for admission, credit may be granted for individual courses successfully completed at other recognized post-secondary institutions, if:

1. the individual courses are relevant to a student's proposed program; and,
2. the appropriate academic department recommends such action.

Each application is evaluated on its own merits.

2.2.5 Transfer of Credit Subsequent to Admission

Letter of Permission

Students who have been formally admitted to a degree, certificate or diploma program may apply to take courses at other recognized post-secondary institutions on Letters of Permission and have the credits transferred to their Carleton programs. The following conditions must be met:

1. the student must have successfully completed at least 3.0 credits or have met the required program residency requirements at Carleton University;
2. the student must present the minimum CGPA requirements for graduation in their credential;
3. the student must obtain formal approval from the Registrar's Office prior to commencing each course.

Grades for successfully completed courses taken on Letters of Permission are transferred back to Carleton University as SAT (Satisfactory) and are not included in CGPA calculations. A course taken on Letter of Permission and failed is recorded with the grade UNS (Unsatisfactory). Failures are not included in CGPA calculations. A higher level of performance may be required in a course that would have contributed to any programmatic CGPA had the grade been transferred.

University of Ottawa Exchange Agreement

Degree Students may register to take courses at the University of Ottawa to be credited to their Carleton University degree. The following regulations apply:

1. Students with second-year standing and above must be *Eligible to Continue* (EC) in their most recent Academic Continuation Evaluation (ACE). If the student has not yet received an ACE decision, they must have an overall CGPA of 4.00.
2. For students with first-year standing, a maximum of two half-credit courses may be taken at the University of Ottawa that year.

3. Only courses to be credited as part of the current degree requirements at Carleton may be taken under the terms of the exchange.
4. The cumulative total number of credits taken at Carleton and counting towards the degree must be greater than the total number of credits taken and/or proposed to be taken at the University of Ottawa.
5. Courses taken on the Exchange Agreement shall not count as courses taken at Carleton under residency requirements.
6. Grades for courses taken on the Exchange Agreement will be reported on the Carleton transcript and will be included in the calculation of the CGPAs.
7. Approval by Carleton University does not guarantee registration at the University of Ottawa.

Students withdrawing from University of Ottawa exchange agreement courses must notify the University of Ottawa by the appropriate deadlines, or a failing grade of F may be recorded.

International Exchange Agreements

Undergraduate students may be eligible to take advantage of other exchange agreements with universities throughout the world. Unless otherwise specified in a specific exchange agreement or Senate-approved program regulation, the minimum academic requirement is second-year standing or higher, and a minimum overall CGPA of 7.00. For details on these exchanges, students should consult the International Student Services Office at least one year in advance of the proposed exchange. Grades for successfully completed courses taken on International Exchange will not be transferred. Successfully completed courses will be recorded as SAT (Satisfactory) and unsuccessfully completed courses will be recorded as UNS (Unsatisfactory). A higher level of performance may be required in a course that would have contributed to any programmatic CGPA had the grade been transferred. Such a course with a passing grade below the minimum required will not count towards the degree.

Dual Degree Agreement

Undergraduate students who have been formally admitted to a degree may be eligible to complete concurrent degrees from Carleton University and a partner institution under the Dual Degree Policy and program-specific articulation agreement provided the following regulations are met:

1. the student must be registered in a degree program and must be in good academic standing;
2. only courses to be credited as part of the current degree requirements at Carleton may be taken under the terms of the agreement;
3. courses taken under this agreement shall count as courses taken at Carleton under residency and advanced residency requirements (see 2.2.2/3.4.1 Minimum Number of Residency Credits and 2.2.3/3.4.2 Advanced Credits for more information);
4. grades for courses taken under this agreement will be reported on the Carleton transcript and will be included in the calculation of the CGPAs;

5. for details on the application process, students should consult with the appropriate Academic Department and the Registrar's Office.

2.2.6 Credit for ESL Courses

A student in a degree program may receive credit for previously completed English as a Second Language courses from the sequence ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905, with the following restrictions:

1. for students in degrees offered by the Faculty of Arts and Social Sciences or the Faculty of Public Affairs, up to 2.0 credits will be counted toward the degree;
2. for students in degrees offered by the Sprott School of Business, credit will be allowed only for ESLA 1900 (or ESLA 1905);
3. for students in degrees offered by the Faculty of Science, credit will be allowed only for ESLA 1900 (or ESLA 1905);
4. for students in the Bachelor of Engineering degree, no credits from this sequence will be counted toward the degree;
5. for students in the Bachelor of Industrial Design degree or the Bachelor of Architectural Studies degree, credit will be allowed only for ESLA 1900 (or ESLA 1905).

2.3 Student Records

2.3.1 Electronic Communication

The University provides each student with an email address and uses this as an official channel of communication with the student. A message sent to a student's University-provided email address constitutes an official communication with the student. Students are responsible for monitoring their University email address on a regular basis for as long as they are active in the academic affairs of the University. Requests from students regarding academic or administrative issues must be sent from the student's University-provided email address.

2.3.2 Student Record Information: Names and Addresses

Names

As the University is committed to the integrity of its student records, students are required to provide their complete, legal name on applications for admission or on personal data forms required for registration. Any requests to change a name, by means of alteration, deletion, substitution or addition, must be accompanied by appropriate supporting documentation. Upon making an application for graduation, students may be asked to provide proof of their legal name.

Addresses

Students are responsible for keeping their address and phone number information current. Students are required to maintain and update their address and phone number information through Carleton Central. Incorrect address information may delay the receipt of important academic information.

2.3.3 Records Retention Policy

The University's records retention policy provides for the destruction of physical student file folders and their contents after five years have elapsed since the last registration. Carleton University student academic history information is retained electronically in perpetuity. This policy applies to all students who are formally admitted and registered at the University. Students who go through the admissions process but do not accept an offer of admission will have their files destroyed at the end of the admissions cycle. Further information on the policy can be obtained by contacting the Registrar's Office.

2.3.4 Disclosure of Information

Carleton University is required to disclose personal information such as Ontario Education Numbers, student characteristics and educational outcomes to the Ministry of Training, Colleges and Universities under s. 15 of the Ministry of Training, Colleges and Universities Act, R.S.O. 1990, Chapter M. 19, as amended. The ministry collects this data for purposes such as planning, allocating and administering public funding to colleges, universities and other post-secondary educational and training institutions and to conduct research and analysis, including longitudinal studies, and statistical activities conducted by or on behalf of the ministry for purposes that relate to post-secondary education and training. Further information on how the Ministry of Training, Colleges and Universities uses this personal information is available on the ministry's website.

Further information on the collection and use of student-level enrolment-related data can be obtained from the Ministry of Training, Colleges and Universities website: ontario.ca/page/ministry-training-colleges-universities.

In accordance with the Freedom of Information and Protection of Privacy Act (FIPPA), all personal and academic information is considered confidential and will not be disclosed to a third party without the authorization of the person to whom the information pertains. In addition, the University will disclose at the time of collection of personal information the purpose for which that information will be used. For further information, see carleton.ca/privacy/policies

2.3.5 Use of Student Work in Program Assessment

All academic programs at Carleton University are reviewed cyclically under the mandate of the Ontario Universities Council on Quality Assurance. Several programs at Carleton University are also accredited by professional bodies and must undergo review for continuing accreditation.

Student records and student work such as portfolios, exams, assignments, and theses may be used in the review and evaluation of academic programs. Appropriate steps will be taken to ensure that information and material used in the evaluation of a program is kept confidential and that the processes comply with applicable privacy regulations. These reviews may involve bodies external to the University, for example, in complying with reviews

required by the government or professional accreditation bodies.

Student Responsibility

1.1 STUDENT RESPONSIBILITY

It is the student's responsibility to remain informed of all University rules and regulations as well as those pertaining to their program. Ignorance of the rules and regulations will not be accepted as grounds for waiving them.

Acceptance by the University of a registration does not exempt the student from any academic regulation or requirement.

The Senate of Carleton University may at any time require a student to withdraw from the University if his or her conduct, attendance, work, or progress is deemed unsatisfactory.

Further information:

- Carleton University disclaimer statement
- Academic Integrity Policy

1.2 The Comprehensive Regulations

1.2.1 The Senate of Carleton University may at any time require a student to withdraw from the University if the student's conduct, attendance, work or progress is deemed unsatisfactory.

1.2.2 Registration in courses does not exempt the student from any academic or University regulation.

Bachelor of Architectural Studies

Academic Continuation Evaluation for Bachelor of Architectural Studies

B.A.S. Conservation and Sustainability, B.A.S. Urbanism

Students in these programs are Honours students, and follow the continuation requirements governing Honours programs as described in Section 3.2.6 of the *Academic Regulations of the University*, with the additions and amendments listed below.

Students with 15.5 or more program credits completed, but who have a Major CGPA less than 6.00, will be required to leave the B.A.S. Conservation and Sustainability or B.A.S. Urbanism programs with the decision *Required to Withdraw for Two Terms (WT)*.

B.A.S. Design

B.A.S. Design students follow the continuation requirements governing the B.A.S. Design program as described in Section 3.2.6 of the *Academic Regulations of the University*, with the additions and amendments listed below.

All B.A.S. Programs

The following additions and amendments apply to all B.A.S. programs:

1. Whenever the student is assessed, the Core minimum is applied, as described in point 2 below.

2. The status *Eligible to Continue (EC)* requires a minimum grade of C- in each B.A.S. Core course.
3. The B.A.S. Core Courses consist of the following:

B.A.S. Design

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2105 [1.5]	Studio 2
ARCS 2106 [1.5]	Studio 3
ARCS 3105 [1.5]	Studio 4
ARCS 3107 [1.0]	Studio 5
ARCS 4105 [1.5]	Comprehensive Studio
ARCS 4107 [1.0]	Option Studio

B.A.S. Urbanism

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2303 [1.0]	Urbanism Studio 1: Fundamentals of Urbanism
ARCS 2304 [1.0]	Urbanism Studio 2: Urbanism in the Core
ARCS 3304 [1.0]	Urbanism Studio 3: Urbanism on the Periphery
ARCS 3306 [1.0]	Urbanism Studio 5: Global Perspectives
ARCS 4105 [1.5]	Comprehensive Studio

B.A.S. Conservation and Sustainability

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2302 [1.0]	Conservation Studio 1
ARCS 3301 [1.0]	Conservation Studio 2
ARCS 3302 [1.0]	Conservation Studio 3
ARCS 4301 [1.5]	Conservation Studio 4
ARCC 3502 [0.5]	Introduction to Architectural Conservation

4. Students whose Academic Continuation Evaluation results in the status *Required to Withdraw for Two Terms (WT)* must leave the B.A.S. degree. Application for readmission to any B.A.S. program may be made after this time.

See the *Academic Regulations of the University* section of the Calendar for additional information.

Bachelor of Arts

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the

Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics,

Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by

demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Bachelor of Cognitive Science

Academic Regulations and Requirements for the Bachelor of Cognitive Science Degree

The regulations presented below apply to all Bachelor of Cognitive Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.Cog.Sc. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM (one 1.0-credit FYSM or two 0.5-credit FYSMs) and can only register in a FYSM while they have first-year standing in their B.Cog.Sc. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Change of Program Within the B.Cog.Sc. Degree

Students may transfer to a program within the B.Cog.Sc. degree. Applicants must normally be *Eligible to Continue* (EC) in their year level, in addition to meeting

the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*. Other applications for change of program will be considered on their merits; students may be admitted to the new program if they are *Eligible to Continue* (EC) or on *Academic Warning* (AW).

Applications to declare or change programs within the B.Cog.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration, or Specialization requires the student to be meeting the minimum CGPAs defined in Section 3.1.9 Changes of Program and Degree, in the *Academic Regulations of the University*.

Mention : français

Students registered in the B.Cog.Sc. may earn the notation *Mention : français* by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below.

Students in the B.Cog.Sc. Honours program must present:

1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level taken in French. These credits may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Students in the B.Cog.Sc. program must present:

1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada
3. 1.0 credit at the 2000- or 3000-level taken in French. This credit may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this

Calendar for information regarding study on Exchange or Letter of Permission.

Bachelor of Engineering Degree

Regulations

The regulations presented in this section apply to all Bachelor of Engineering programs.

Academic Continuation Evaluation

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see Section 3.2 Academic Progression, in the *Academic Regulations of the University*), with the following additions and amendments:

1. In Engineering programs, all credits are included in the Major CGPA, making it identical to the Overall CGPA.
2. Students who are not assigned the status *Eligible to Continue* (EC) or *Academic Warning* (AW) will be required to leave the degree with either the status *Continue in Alternate* (CA) or *Dismissed from Program* (DP).

Graduation

Students in Engineering programs are covered by the common University regulations regarding graduation, with the following additions and amendments.

1. Students entering an Engineering program with Advanced Standing will receive transfer credit for at most ten of the credits required for their program.
2. To be eligible for graduation, the most recent grade in every course used to meet the requirements of the Bachelor of Engineering degree must be a passing grade.

Course Load

Regulations regarding Course Load and Overload can be found in the *Academic Regulations of the University* section of this Calendar. The normal course load in Engineering is defined as the number of credits required in the student's program for the current year status of the students. Since the programs in Engineering require more than 20.0 credits in total, the normal course load is more than 5.0 credits in some years of the program. Registration in more than this number of credits constitutes an overload.

Co-operative Education Programs

All Engineering programs are available with or without participation in the Co-operative Education option.

Year Status Prerequisites

Year Status in Engineering is used in some course prerequisites to limit access to only those students who have sufficient preparation. In particular, students will not have access to second, third or fourth year engineering, science or mathematics courses until they have achieved second year status. Similarly, to take some specific engineering, science and mathematics courses in third or fourth year, that year status must be achieved. For

additional information on prerequisites, see the individual course descriptions.

2nd year status: Students may not continue into 2000-level (or higher) engineering courses unless all the following requirements are met:

1. Successful completion of all ECOR 1040 series of courses with a minimum grade of C-;
2. Successful completion of MATH 1004, MATH 1104, CHEM 1101 (or CHEM 1001 and CHEM 1002), and PHYS 1004 (or PHYS 1001 and PHYS 1002);
3. Successful completion of all English as a Second Language Requirements, and any additional requirements as determined in the admission process.

Students may not continue into 3000-level (or higher) engineering courses until they complete all first-year requirements (including ECOR 1055, ECOR 1056, and ECOR 1057).

3rd year status: Students may not take courses with third-year status in Engineering as a prerequisite until successful completion of all first-year requirements and at least 4.0 credits from the second-year requirements of their current program.

4th year status: Students may not take courses with fourth-year status in Engineering as a prerequisite until successful completion of all second-year requirements and at least 3.5 credits from the third-year requirements of their current program.

Time Limit

The Bachelor of Engineering degree must be completed within eight calendar years of initial registration. Students who do not complete their program requirements within this limit will be given the status *Continue in Alternate* (CA).

Academic Appeals

The Engineering Committee on Admission and Studies handles all academic appeals.

Global and International Studies

B.G.In.S. Regulations

The regulations presented in this section apply to all Bachelor of Global and International Studies programs.

In addition to the program requirements and requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.G.In.S degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit of FYSM and can only register in a FYSM while they have first-year standing in their B.G.In.S program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as

a Second Language (ESLA) credit are not permitted to register in a FYSM.

Change of Specialization or Stream Within the B.G.In.S Degree

Students may change specialization or stream, or change from/to specialization or stream within the B.G.In.S. during the first or subsequent years of study if, upon entry to the new specialization or stream, they would be in good academic standing.

Minors

Students may apply to the Registrar's Office to be admitted to a minor during their first or subsequent years of study. Acceptance into a minor is normally subject to meeting the minimum CGPA requirements described in Section 3.1.9 of the *Academic Regulations of the University*, as well as any specific requirements of the intended minor as published in the relevant Calendar entry. B.G.In.S. Honours students may take a maximum of one minor. B.G.In.S. students may take a maximum of two minors.

Bachelor of Industrial Design

Regulations

The regulations presented in this section apply to all students in the Bachelor of Industrial Design program.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

Year Status and General Prerequisites

In the Bachelor of Industrial Design degree program, year status is defined as follows:

1st year: Admission to the program.

2nd year: Successful completion of IDES 1001, IDES 1301 and must not be deficient in any more than one of the other first year courses.

3rd year: Successful completion of IDES 2302 and all first and second year course requirements.

4th year: Successful completion of IDES 3302 and all third year course requirements.

Bachelor of Information Technology

Regulations

The regulations presented in this section apply to all students in the Bachelor of Information Technology program.

In addition to the program requirements, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

Joint Status

A student registered in the BIT degree has student status at both Algonquin College and Carleton University. At

Algonquin College the student is considered to be a post-secondary student; at Carleton University, the student is considered to be a degree student. Students registered in the BIT degree have access to all student services on the Carleton University campus and selected services on the Algonquin College campus.

Academic Regulations

The academic regulations governing the B.I.T. are the academic regulations of Carleton University. These regulations are defined in full in the Academic Regulations of the University section of this Calendar and apply to B.I.T. students on both campuses. Within the context of these regulations, B.I.T. is considered to be a non-honours degree, with a defined Major CGPA, and requires 20.0 credits. Courses with the designations BIT, NET or IMD are not normally transferable to Engineering, Computer Science, or other programs at Carleton University.

Students should note that there are significant differences between the academic regulations of Carleton University and Algonquin College, it is the regulations of Carleton University that apply in all cases as related both to course registrations and program rules.

At Carleton University, the chief examination officer of the BIT is the Dean of Engineering and Design. At Algonquin College, grades are approved by the Dean of the respective School.

Graduation

In order to graduate with the Bachelor of Information Technology Degree and the Advanced Diploma of Technology or Advanced Diploma of Applied Arts, the student must:

1. satisfy all requirements for the program of study;
2. be recommended for graduation by Bachelor of Information Technology Academic Council;
3. be approved for graduation by the Senate of Carleton University;
4. be approved for graduation by the Registrar of Algonquin College.

Discipline

The regulations, procedures and sanctions that apply to student discipline on either campus, both concerning Instructional Offences and Offences of Conduct are those of Carleton University and are described in the Carleton University Undergraduate Calendar. However, while students are on Algonquin's campus, they are expected to follow Algonquin's Directives regarding Student Misconduct and Use of Electronic Devices.

Bachelor of Science Degree

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor,

Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology
Chemistry	
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry
Earth Sciences	
ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology
Food Sciences	
FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology
Geography	
GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties
Neuroscience	
NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)
BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business

MATH 1401 [0.5] Elementary Mathematics for Economics I

MATH 1402 [0.5] Elementary Mathematics for Economics II

Post-Baccalaureate Diploma

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job.

It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Co-op Continuation Requirements by Program

B.A. Honours Anthropology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Anthropology Program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, and any two of ANTH 3005, ANTH 3007 or ANTH 3008.

Students in B.A. Honours Anthropology must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: ANTH 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	W/S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours English

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours English program;
2. Obtained and maintained an overall CGPA of 9.0 or higher at the end of second year of academic study
3. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher by the end of third year of academic study

Students in B.A. Honours English must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: ENGL 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	W	Winter	S
Summer		Summer		Summer	S	Summer	O		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours Environmental Studies

- Maintain full-time status in each study term (2.0 credits);

- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Environmental Studies program;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a minimum major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:
 - a. the required second-year methods courses in their program (ENST 2005, ENST 2006)
 - b. the required field course in their program (ENST 3900)
5. Be registered as a full-time student.

B.A. Honours Environmental Studies students must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op work term course: ENST 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

- S:** Study
- W:** Work
- O:** Optional

* indicates recommended work study pattern
 ** student finds own employer for this work-term.

B.A. Honours European and Russian Studies

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours European and Russian Studies program
2. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher
3. Have successfully completed by the start-date of the first work term, the required first-year courses, second-year courses ; have completed PSCI 3206, PSCI 3207, PSCI 3208, and PSCI 3209, before the second work term; and ECON 3807 or ECON 3808 before the third work term

Students in B.A. Honours European and Russian Studies must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: EURR 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S

Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	O		

Legend

- S:** Study
- W:** Work
- O:** Optional

* indicates recommended work study pattern
 ** student finds own employer for this work-term.

B.A. Honours French

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours in French;
2. Obtained and maintained an 8.0 CGPA overall with a major CGPA of 9.0;
3. Have obtained third-year standing by the first work term;
4. Successfully completed before beginning first work term: FREN 2401; FREN 2202 and FREN 2203; and at least one 3000-level course in French.

Students in B.A. Honours French must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: FREN 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	W/S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

- S:** Study
- W:** Work
- O:** Optional

* indicates recommended work study pattern
 ** student finds own employer for this work-term.

B.A. Honours Geography

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, or B.Sc. Honours Physical Geography;
2. Obtained and maintained an overall minimum CGPA of 9.50 and a minimum major CGPA of 9.50;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:

- a. BA Geography students: GEOG 2005 and GEOG 2006. B.Sc Geography students: GEOG 2006.
 - b. the required field course in their program (GEOG 3000, GEOG 3010, or GEOG 3030)
5. Be registered as a full-time student.

B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, B.Sc. Honours Physical Geography students must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op work term course: GEOG 3999
Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours Geomatics

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the Bachelor of Arts Honours or Bachelor of Science Honours in Geomatics;
 2. Obtained and maintained an overall minimum CGPA of 9.50 and a major CGPA of 9.50;
 3. Have obtained third-year standing;
 4. Successfully completed, by the start-date of the first work term:
 - a. BA Geomatics students: GEOG 2005/ENST 2005 and GEOG 2006/ENST 2006. B.Sc. Geomatics students: GEOG 2006/ENST 2006).
 - b. the required field course in their program (ENST 3900, GEOG 3000, GEOG 3010, or GEOG 3030)
5. Be registered as a full-time student.

B.A. Honours and B.Sc. Honours Geomatics students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: GEOM 3999
Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours History

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours History;
2. Obtained and maintained an overall minimum CGPA of 8.0;
3. Have obtained second-year standing;
4. Be registered as a full-time student.

Students in B.A. Honours History must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: HIST 3999
Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W (O)		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours Law

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Arts Honours - Law program (with or without a concentration);
2. Obtained an overall CGPA of 9.00 and major CGPA of 9.00;
3. Completed 3.5 credits in Law, including LAWS 2908, prior to their first work term. It is strongly recommended that students complete all first and second year Law requirements prior to entering their first work term.

Students in B.A. Honours Law (with or without a concentration) must successfully complete three (3) work terms to obtain the Co-op designation.

Co-operative Work Term Course: LAWS 3999
Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	
Summer		Summer	W	Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours Political Science

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the second year of the Bachelor of Arts Honours -Political Science program;
2. Obtained and maintained an overall CGPA of 9.00.

Students in B.A. Honours Political Science must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term course: PSCI 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Term	Pattern
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern		
Fall	S	Fall	S	Fall	W	Fall	W/S		
Winter	S	Winter	S	Winter	S	Winter	W		
Summer		Summer	W/S	Summer	W/S	Summer	S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours Psychology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have an overall minimum CGPA of 9.50 and a major CGPA of 9.5 at the end of first year of academic study
2. Have second-year standing
3. Have successfully completed, by the start-date of the first work term, PSYC 2001 and PSYC 2002

Students in B.A. Honours Psychology must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: PSYC 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer	O	Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.A. Honours Sociology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Sociology program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, SOCI 2000 and SOCI 2001 or SOCI 3000

Students in B.A. Honours Sociology must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: SOCI 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	W/S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Biochemistry, Computational Biochemistry

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biochemistry and Computational Biochemistry students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: BIOC 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Biology, Bioinformatics

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biology and Bioinformatics students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: BIOL 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Biochemistry and Biotechnology, Biology and Biotechnology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;

2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biochemistry and Biotechnology and B.Sc. Honours Biology and Biotechnology students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: BIOL 3999 or BIOC 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Chemistry

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Chemistry students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: CHEM 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Earth Sciences

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Earth Sciences students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: EARTH 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Environmental Science

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Environmental Science students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: ENSC 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Food Science

- Maintain full-time status in each study term (2.0 credits);

- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Science Honours in Food Science;
2. Obtained and maintained an overall CGPA of 6.5 or higher and a major CGPA of 8.0 or higher in the first three years of academic study;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term, 1.0 credit from FOOD 3001, FOOD 3002, FOOD 3005;
5. Successfully completed, by the start date of the first work term, an additional 0.5 credit in FOOD at the 3000- or 4000-level, not already counted in Item 4

B.Sc. Honours Food Science students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: FOOD 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall		Fall	S	Fall	S	Fall	W/S	Fall	S
Winter		Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Geography

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, or B.Sc. Honours Physical Geography;
2. Obtained and maintained an overall minimum CGPA of 9.50 and a minimum major CGPA of 9.50;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:
 - a. BA Geography students: GEOG 2005 and GEOG 2006. B.Sc. Geography students: GEOG 2006.
 - b. the required field course in their program (GEOG 3000, GEOG 3010, or GEOG 3030)
5. Be registered as a full-time student.

B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, B.Sc. Honours Physical Geography

students must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op work term course: GEOG 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Geomatics

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the Bachelor of Arts Honours or Bachelor of Science Honours in Geomatics;
2. Obtained and maintained an overall minimum CGPA of 9.50 and a major CGPA of 9.50;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
 - a. BA Geomatics students: GEOG 2005/ENST 2005 and GEOG 2006/ENST 2006.
B.Sc. Geomatics students: GEOG 2006/ENST 2006).
 - b. the required field course in their program (ENST 3900, GEOG 3000, GEOG 3010, or GEOG 3030)
5. Be registered as a full-time student.

B.A. Honours and B.Sc. Honours Geomatics students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: GEOM 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Interdisciplinary Science and Practice

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student (2.0 credits) in the Bachelor of Science Honours in Interdisciplinary Science and Practice;
2. Successfully completed, by the start date of the first work term, the following 2.0 credits: ISAP 3001, ISAP 3002, ISAP 3003, ISAP 3004.
3. Have obtained third-year standing;
4. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study;

B.Sc. Honours Interdisciplinary Science and Practice students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: ISAP 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Neuroscience and Mental Health, Combined Honours Neuroscience and Biology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Neuroscience and Mental Health and B.Sc. Combined Honours Neuroscience and Biology students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course for Neuroscience and Mental Health: NEUR 3999

Work Term Course for Combined Honours Neuroscience and Biology: NEUR 3999, BIOL 3999

Work-Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Honours Physics, Applied Physics

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Physics and Applied Physics students must successfully complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: PHYS 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Architectural Studies

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the B.A.S. program;
2. Obtained and maintained an overall CGPA of 9.00 or higher.

Students in the Bachelor of Architectural Studies must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Report Course: ARCN 3999 [0.0]

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Cognitive Science

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Cognitive Science program;
2. Obtained and maintained an overall CGPA of 8.50 or higher;
3. Successfully completed CGSC 2001.

Bachelor of Cognitive Science Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: CGSC 3999 [0.0]

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 4	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	
Summer		Summer		Summer	W	Summer	W	Summer	

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Commerce

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have a major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher;
2. Successfully completed 6.0 credits in the major and have at least 6.0 credits remaining for completion of the B.Com. program prior to their first work term;
3. Registered as a full-time student in the Bachelor of Commerce program.

To obtain the co-op designation students must successfully complete three (3) work terms.

Co-op Work Term Course: BUSI 3999

Work/Study Patterns:

Accounting

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	W*	Winter	
Summer		Summer	W/S	Summer	W	Summer	S		

Entrepreneurship

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	
Summer		Summer	W/S	Summer	W/S	Summer	W*		

Finance, International Business, Marketing, Supply Chain, and students without a concentration

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	
Summer		Summer	W	Summer	W	Summer	W*		

Information Systems, Management

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	W*
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer	W/S	Summer	W	Summer	W*		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Communication and Media Studies

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Communication and Media Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Communication and Media Studies Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: COMS 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	
Summer		Summer	W	Summer	W	Summer	S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Computer Science

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. A major CGPA of 8.00 or higher and an overall CGPA of 8.00 or higher;
2. Successfully completed 3.0 required credits in Computer Science, including one of COMP 2402 or COMP 2404;
3. Registered as a full-time student in the Bachelor of Computer Science program (2.0 credits).

Bachelor of Computer Science Honours and Major students must successfully complete four (4) work terms to obtain the Co-op designation.

Co-op Work Term Course: COMP 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer	**O	Summer	W	Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Economics

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the second year of the Bachelor of Economics Honours program
2. A major CGPA of 8.00 or higher and an overall CGPA of 8.00 or higher;
3. Successfully completed all required first- and second-year courses before beginning the first work term.

To obtain the co-op designation in Bachelor of Economics, students must successfully complete three (3) work terms.

Work Term Report Course: ECON 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Engineering

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Engineering program
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first and second year courses before beginning the first work term;
4. Students must be eligible for third-year standing when they return for a study term after their first work placement.

Students in all Bachelor of Engineering concentrations must successfully complete four (4) work terms to obtain the co-op designation.

Work Term Courses:

Aerospace Engineering and Mechanical Engineering,
Biomedical and Mechanical Engineering:

MAAE 3999 [0.0] Co-operative Work Term

Architectural Conservation and Sustainability Engineering:

CIVE 3999 [0.0] Co-operative Work Term
or ENVE 3999 [0.0] Co-operative Work Term

Civil Engineering:

CIVE 3999 [0.0] Co-operative Work Term

Communications Engineering, Computer Systems
Engineering and Software Engineering:

SYSC 3999 [0.0] Co-operative Work Term

Biomedical and Electrical Engineering, Electrical
Engineering and Engineering Physics:

ELEC 3999 [0.0] Co-operative Work Term

Environmental Engineering:

ENVE 3999 [0.0] Co-operative Work Term

Sustainable and Renewable Energy Engineering:

ELEC 3999 [0.0] Co-operative Work Term

MAAE 3999 [0.0] Co-operative Work Term

(depending on student's stream)

Work/Study Patterns

Aerospace Engineering, Architectural Conservation and Sustainability Engineering, Biomedical and Mechanical Engineering, Civil Engineering, Communications Engineering, Environmental Engineering, Mechanical Engineering, Sustainable and Renewable Energy Engineering

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer	**O	Summer	O/W	Summer	W	Summer	W		

Electrical Engineering, Engineering Physics

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer	**O	Summer	W	Summer	S	Summer	W		

Biomedical and Electrical Engineering, Computer Systems Engineering, Software Engineering

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer	W	Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Global and International Studies

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Global and International Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.5 or higher in the first two years of academic study;
3. Have obtained third-year standing;
4. Prior to the first work term, have successfully completed GINS 3010 and GINS 3020

Students in B.G.In.S must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: GINS 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Industrial Design

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to:

1. Registered as a full-time student in the Industrial Design program
2. Obtained a CGPA of 8.00 or higher in industrial design core courses and an overall CGPA of 6.50 or higher

Students in the Bachelor of Industrial Design must complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: IDES 3999

Work-Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer	W	Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Information Technology

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Obtained and maintained a major CGPA of 8.0;
2. Successfully completed all required first-year courses, and
3. Registered as a full-time student in the Bachelor of Information Technology program

Students in the Bachelor of Information Technology must complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: BIT 3999

Work/Study Pattern:

Interactive Multimedia and Design, Information Resource management, Network Technology, Photonics and Laser Technology

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer	W	Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Mathematics Honours, Combined B.Math/M.Sc.

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to:

Students in any of these programs (excluding Biostatistics) must satisfy the following:

1. Completion of 5.0 or more credits (at least 2.0 in Mathematics/Statistics) at Carleton in any Honours program (excluding Biostatistics), or the Combined B.Math./M.Sc. ("Fast Track") programs, offered by the School of Mathematics and Statistics
2. A major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher

Students in the B.Math. (Combined Honours) Biostatistics program must satisfy the following:

1. Full-time student in the B.Math. Biostatistics program;
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first year courses before beginning the first work term
4. Students must be eligible for third-year standing when they return for a study term after their first work term.

Students in these programs must successfully complete four (4) work terms to obtain the co-op designation.

Co-op Work Term Course: MATH 3999 or STAT 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Bachelor of Media Production and Design

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Media Production and Design program;

2. Successfully completed MPAD 2002 before beginning the first work term.
3. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Media Production and Design students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: MPAD 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	*W/S	Winter	S	Winter	S
Summer		Summer		Summer	*W/S	Summer	W/S		

Legend

- S:** Study
- W:** Work
- O:** Optional

- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

Bachelor of Public Affairs and Policy Management

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the B.P.A.P.M. (Honours) program;
2. Obtained an overall CGPA of 9.00 or higher calculated on at least 5.0 credits.

Students in the Bachelor of Public Affairs and Policy Management (Honours) must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: PAPM 3999

Work/Study Pattern:

Public Policy and Administration, Human Rights, Development Studies, International Studies, Communication and IT Policy, Strategic Opinion and Policy Analysis, Social Policy

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	
Summer		Summer	W	Summer	W	Summer	S		

Legend

- S:** Study
- W:** Work
- O:** Optional

- * indicates recommended work study pattern
- ** student finds own employer for this work-term.

Enriched Support Program/ Indigenous Enriched Support Program

General Information

The Enriched Support Program (ESP) is operated by the Centre for Initiatives in Education (CIE). The ESP is a program for students whose academic potential has not been realized in high school and who do not meet university admission requirements. The program gives these students the opportunity to demonstrate their abilities within the context of university-level courses. ESP students attend three credits with regularly admitted students and are graded according to the same standards. ESP students also enrol in mandatory, content-related workshops designed to provide the academic support these students need to make the transition to university-level work.

The Indigenous Enriched Support Program (IESP) is operated by the Centre for Indigenous Support and Community Engagement (CISCE), and is designed for First Nations (status & non-status), Métis, and Inuit learners who wish to pursue post-secondary education. IESP is ideal for students who do not meet the full criteria for a degree program, are unsure about what program they wish to pursue, who are returning to school after some time away, or are simply looking for additional support during the transition to post-secondary education.

General Information

The Indigenous Enriched Support Program (IESP) is designed for First Nations (status & non-status), Métis, and Inuit learners who wish to pursue post-secondary education. Students attend three credits with regularly-admitted students and are graded according to the same standards, while benefiting from a supportive environment of peer mentors, academic coaches, academic advising, and personalized seminars. Upon completion of the program, students will qualify and be supported in the process of applying for a degree program.

The Indigenous Enriched Support Program is ideal for students who do not meet the full criteria for a degree program, are unsure about what program they wish to pursue, who are returning to school after some time away, or are simply looking for additional support during the transition to post-secondary education.

All currently registered and prospective IESP students (see Student Classification, below) should contact the CISCE for application and registration information.

Admission to the IESP

Students wishing to apply for admission to the IESP should contact the CISCE directly. For details and an application form, visit <https://carleton.ca/indigenous/cisce/iesp/registration/>.

IESP Student Classification

IESP students fall under the Special Student designation at Carleton University. Special students are those who

have not been admitted to a degree program but who are taking degree-credit courses to qualify for admission.

IESP Students

Under the Special Student designation, IESP students enrol in the same courses and meet the same course requirements as students in degree programs. IESP students choose their credits from a specific selection of IESP-supported courses.

Registrarial services for IESP students are provided by the Centre for Indigenous Support and Community Engagement, and the Registrar's Office. IESP students are also encouraged to consult the appropriate Faculty regulations for information about degree programs they intend to apply for upon successful completion of the IESP.

Proficiency in English

Since the instructional language of the University is English, applicants to the IESP must be able to understand and be understood in both written and oral English. See Section 4, English Language Proficiency in the *General Admissions Requirements and Procedures* for the statement of policy governing applicants whose first language is not English.

Course Load and Course Selection

Normally, IESP students may enrol in a maximum of 3.0 credits per academic session (fall/winter) and no more than the equivalent of 1.5 credits (e.g. three half-credit courses) in any one term. Course selection is limited to IESP-designated courses, many of which emphasize reading and writing skills, and are selected in consultation with an IESP academic advisor. For two of these courses, students also attend regular weekly small-group seminars, where they are given extra support and guidance in dealing with the course material. These seminars are designed to develop the skills and strategies necessary for university-level critical thinking, analysis, reading, and writing.

Students wishing to be admitted to a degree upon completion of the IESP are advised to note the specific Faculty requirements for course selection and the admission requirements as they are listed in this Calendar. Individuals seeking admission who need further information should inquire at Admissions Services or consult an IESP academic advisor.

Course Change and Course Withdrawal

Students must contact an IESP academic advisor for assistance with course changes and withdrawals.

Deferred Final Examinations

Please consult Section 4.3 of the *Academic Regulations of the University* in this Calendar.

Financial Assistance

IESP students interested in obtaining financial assistance are advised to contact the Student Awards Office at carleton.ca/awards.

Admission to a Degree Program upon Completion of IESP

IESP students are subject to the same admission requirements as Special Students. These requirements are outlined in Section 15. Special Studies (Non-Degree) in the *General Admission Requirements and Procedures*.

General Information

The Enriched Support Program (ESP) is operated by the Centre for Initiatives in Education (CIE). The ESP is a program for students whose academic potential has not been realized in high school and who do not meet university admission requirements. The program gives these students the opportunity to demonstrate their abilities within the context of university-level courses. ESP students attend three credits with regularly admitted students and are graded according to the same standards. ESP students also enrol in mandatory, content-related workshops designed to provide the academic support these students need to make the transition to university-level work.

All currently registered and prospective ESP students (see Student Classification, below) should contact the CIE for application and registration information.

Admission to the ESP

Students wishing to apply for admission to the ESP should contact the CIE directly. For details and an application form, visit: carleton.ca/esp

ESP Student Classification: ESP students fall under the Special Student designation at Carleton University. Special students are those who have not been admitted to a degree program but who are taking degree-credit courses to qualify for admission.

ESP Students

Under the Special Student designation, ESP students enrol in the same courses and meet the same course requirements as students in degree programs. ESP students choose their credits from a specific selection of ESP supported courses.

Registrarial services for ESP students are provided by the Centre for Initiatives in Education and the Registrar's Office. ESP students are also encouraged to consult the appropriate Faculty regulations for information about degree programs they intend to apply for upon successful completion of the ESP.

Proficiency in English

Since the instructional language of the University is English, applicants to the ESP must be able to understand and be understood in both written and oral English. See Section 4. English Language Proficiency, in the *General Admissions Requirements and Procedures* for the statement of policy governing applicants whose first language is not English.

Course Load

Normally, ESP students may enrol in a maximum of 3.0 credits per academic session (fall/winter) and no more than the equivalent of 1.5 credits (e.g. three half-

credit courses) in any one term. Course selection is limited to ESP-designated courses, many of which emphasize reading and writing skills. For two of these courses, students also attend regular weekly small-group workshops, where they are given extra support and guidance in dealing with the course material. The workshops are designed to develop the skills and strategies necessary for university-level critical thinking, analysis, reading and writing.

ESP-Supported Courses

ESP students wishing to be admitted eventually to a degree program are advised to note the specific Faculty requirements for course selection and the admission requirements as they are listed in this Calendar. Individuals seeking admission who need further information should inquire at Admissions Services or the ESP Student Advisory Office.

Course Change and Course Withdrawal

Students must contact an ESP Advisor for assistance with course changes and withdrawals.

Deferred Final Examinations

Please consult Section 4.3 of the *Academic Regulations of the University* in this Calendar.

Financial Assistance

ESP students interested in obtaining financial assistance are advised to contact the Student Awards Office at carleton.ca/awards.

Admission to a Degree Program upon Completion of ESP

ESP students are subject to the same admission requirements as Special Students. These requirements are outlined in Section 15. Special Studies (Non-Degree) in the *General Admission Requirements and Procedures*.

Indigenous Enriched Support Program

General Information

The Indigenous Enriched Support Program (IESP) is designed for First Nations (status & non-status), Métis, and Inuit learners who wish to pursue post-secondary education. Students attend three credits with regularly-admitted students and are graded according to the same standards, while benefiting from a supportive environment of peer mentors, academic coaches, academic advising, and personalized seminars. Upon completion of the program, students will qualify and be supported in the process of applying for a degree program.

The Indigenous Enriched Support Program is ideal for students who do not meet the full criteria for a degree program, are unsure about what program they wish to pursue, who are returning to school after some time away, or are simply looking for additional support during the transition to post-secondary education.

All currently registered and prospective IESP students (see Student Classification, below) should contact the CII for application and registration information.

Admission to the IESP

Students wishing to apply for admission to the IESP should contact the CII directly. For details and an application form, visit carleton.ca/indigenous/cii/iesp/registration/.

IESP Student Classification

IESP students fall under the Special Student designation at Carleton University. Special students are those who have not been admitted to a degree program but who are taking degree-credit courses to qualify for admission.

IESP Students

Under the Special Student designation, IESP students enrol in the same courses and meet the same course requirements as students in degree programs. IESP students choose their credits from a specific selection of IESP-supported courses.

Registrarial services for IESP students are provided by the Centre for Indigenous Initiatives and the Registrar's Office. IESP students are also encouraged to consult the appropriate Faculty regulations for information about degree programs they intend to apply for upon successful completion of the IESP.

Proficiency in English

Since the instructional language of the University is English, applicants to the IESP must be able to understand and be understood in both written and oral English. See Section 4, English Language Proficiency in the *General Admissions Requirements and Procedures* for the statement of policy governing applicants whose first language is not English.

Course Load and Course Selection

Normally, IESP students may enrol in a maximum of 3.0 credits per academic session (fall/winter) and no more than the equivalent of 1.5 credits (e.g. three half-credit courses) in any one term. Course selection is limited to IESP-designated courses, many of which emphasize reading and writing skills, and are selected in consultation with an IESP academic advisor. For two of these courses, students also attend regular weekly small-group seminars, where they are given extra support and guidance in dealing with the course material. These seminars are designed to develop the skills and strategies necessary for university-level critical thinking, analysis, reading, and writing.

Students wishing to be admitted to a degree upon completion of the IESP are advised to note the specific Faculty requirements for course selection and the admission requirements as they are listed in this Calendar. Individuals seeking admission who need further information should inquire at Admissions Services or consult an IESP academic advisor.

Course Change and Course Withdrawal

Students must contact an IESP academic advisor for assistance with course changes and withdrawals.

Deferred Final Examinations

Please consult Section 4.3 of the *Academic Regulations of the University* in this Calendar.

Financial Assistance

IESP students interested in obtaining financial assistance are advised to contact the Student Awards Office at carleton.ca/awards.

Admission to a Degree Program upon Completion of IESP

IESP students are subject to the same admission requirements as Special Students. These requirements are outlined in Section 15. Special Studies (Non-Degree) in the *General Admission Requirements and Procedures*.

Admission Regulations

General Admissions Requirements and Procedures

1. General Admission Requirements

Persons wishing to follow programs of study leading to a degree or diploma or certificate must be formally admitted to the University.

Persons wishing to register in credit courses without having been formally admitted to the University may do so as Special students. See 15. *Special Studies (Non-Degree)* below, for more information.

An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca/requirements for further details.

Applicants should note that meeting the minimum requirements of a program does not guarantee admission to the University. Applications from students whose grades do not meet the requirements in a given year or program will be considered individually. Students in this category may be asked to provide additional information to assist the University in determining where there are special circumstances that would permit their admission to Carleton.

This publication contains admission requirements for the 2021-22 academic year only. Students wishing to apply for 2022-23 should contact Admissions Services for information on requirements and procedures.

Individuals who are in any doubt about their eligibility for admission are encouraged to inquire at Admissions Services.

2. Accessibility for Students with Disabilities

Carleton University is committed to making reasonable accommodation to individuals with disabilities, and actively encourages application from students with disabilities. This commitment includes gaining an understanding of the circumstances of an individual's disabilities and adjusting services to all academically qualified individuals to compete on an equitable basis.

Students are encouraged to contact the Paul Menton Centre for Students with Disabilities for further information to enable them to assess the extent to which specialized services will be available.

Academic accessibility is intrinsically linked to physical accessibility. Carleton is committed to continually monitoring and upgrading physical accessibility to whatever extent is possible.

A Senate standing committee monitors the needs and problems of students with disabilities in conjunction with

their academic problems and makes recommendation for improvements.

3. Multiple Undergraduate Programs

Students who already possess an undergraduate degree, certificate, or diploma from another university or from Carleton University may apply for admission to a second undergraduate program. To be eligible for graduation, there are a minimum number of Carleton credits that must be successfully completed. Please see Section 2.2.2 Minimum Number of Residency Credits and Section 2.2.3 Advanced Credits in the *Academic Regulations of the University*.

4. English Language Proficiency

The language of instruction at Carleton University is English. For admission, students will need to demonstrate that their knowledge and use of English are strong enough for studies in an English language university. Students can do this by:

Demonstrating that they have studied full-time for the last three years in a high school, college, or university in Canada, the United States, the United Kingdom, or any other country in which the primary language is English and where the language of instruction in the relevant educational institution was exclusively English.

Students choosing this option should note the following:

- Time spent in English as a Second Language (ESL) courses will not be counted towards meeting these requirements.
- Language requirements will not be waived based on letters written by educators, or as a result of completing senior-level high school English courses.

OR by submitting an English as a Second Language (ESL) test result.

Option 1

Admission with no English as a Second Language Requirements (ESLR)

Students who demonstrate English language proficiency by submitting transcripts that meet the requirements above, or who submit any of the scores shown in Table 1 below, may be eligible for an offer of admission with no further ESL requirements, and may begin full-time studies in an undergraduate degree, or as a Special student.

Table 1: minimum test scores required for admission with no ESLR

English Language Test	Score	Type of Offer
Cambridge English Assessment	176 or above C1 Advanced or C2 Proficiency, with minimum 169 in each component	Offer to undergraduate degree program or Special studies with no ESLR. May begin full-time studies.

Canadian Academic English Language Assessment (CAEL)	70 or above overall, with minimum score of 60 in each band	Offer to undergraduate degree program or Special studies with no ESLR. May begin full-time studies.
IELTS (Academic)	6.5 with minimum 6.0 in each band	Offer to undergraduate degree program or Special studies with no ESLR. May begin full-time studies.
Internet-based (iBT) TOEFL	86 or above, with minimum score of 22 in writing and speaking, and minimum 20 in reading and listening	Offer to undergraduate degree program or Special studies with no ESLR. May begin full-time studies.
Pearson Test of English (PTE) Academic	60 or above, with minimum score of 60 in each Communicative Skill	Offer to undergraduate degree program or Special studies with no ESLR. May begin full-time studies.

Applicants whose first language is French must present transcripts to indicate that they have taken four years of *anglais* (English) in a Canadian secondary school in order to be admitted without an English as a Second Language Requirement.

**Option 2
Admission with English as a Second Language Requirements (ESLR) — Foundation ESL courses required**

Applicants who do not meet the requirements stated in Option 1, and who submit official English language test scores within the ranges listed in Table 2 below, may be offered admission with an English as a Second Language Requirement (ESLR). These applicants may be offered admission to an undergraduate degree program or as a Special student. When they first start their program, these students will be required to take Carleton's ESL Foundation courses along with a limited number of courses from their degree program. This admission with an ESLR allows students to earn academic credits from degree courses taken while completing the English language requirements.

Table 2: minimum test scores required for admission with an ESLR

English Language Test	Score	Type of Offer
Canadian Academic English Language Assessment (CAEL)	40-69 overall, with minimum score of 30 in each band, and a minimum average of 40 over writing, reading, and listening	Offer to undergraduate degree program or Special studies with ESLR. Must complete Foundation ESL courses.
IELTS (Academic)	5.0-6.4, with a minimum score of 4.5 in each band, and a minimum average of 5.0 in writing, reading, and listening	Offer to undergraduate degree program or Special studies with ESLR. Must complete Foundation ESL courses.
Internet-based (iBT) TOEFL	61-85 overall, with a minimum score of 15 in each section	Offer to undergraduate degree program or Special studies with ESLR. Must complete Foundation ESL courses.

Please note that students beginning their studies with an English Language Requirement (ESLR) are not eligible for admission to the following programs:

- Architectural Studies
- Health Sciences
- Humanities
- Industrial Design
- Information Technology
- International Business
- Journalism
- Journalism and Humanities
- Media Production and Design
- Public Affairs and Policy Management
- Post-Baccalaureate Diplomas (all)

Students admitted with an ESLR are required to:

1. Complete the ESLR within one calendar year of their first enrolment in credit courses.
 - To satisfy the ESLR, students must earn a minimum grade of B- in ESLA 1900 Advanced English as a Second Language for Academic Purposes.
 - Students can satisfy the ESLR at any time by submitting an approved English Language assessment result that meets the levels stated in Table 1 above.
 - In exceptional circumstances, permission to continue registration in ESLA courses after the one calendar year deadline has passed (an ESLR extension) will be granted by the University's School of Linguistics and Language Studies (SLaLS). Registration will be denied to students

who have not satisfied the ESLR if they do not show continuous registration, attendance, and progress in their required ESLA courses (as determined by SLaLS).

2. Register and attend the required credit ESLA course(s) every term until the ESLR has been satisfied.
 - ESLA registration must start in the student's first term of study.
 - ESLA registration is required in order to register in any other course(s).
 - Students who have not registered appropriately will be deregistered from all credit courses. This includes those students registered in credit courses but not the required ESLA course registration, those registered in more non-ESLA credits than their test results permit, those registered with expired ESLR placements, and those whose ESLA period has not been extended.
 - Students who do not achieve the minimum final grade required to advance to the next level of an ESLA course after three attempts at one level will not be permitted to register in any credit courses for one calendar year. Such students must take a SLaLS-approved English language proficiency test and place into a higher ESLA course level before returning to their studies.

Students considering a break in study or withdrawing from their ESLA course should contact SLaLS to discuss their ESLR standing. After a break in studies or lack of completion of an ESLA course for three terms or longer, students may be required to re-take a SLaLS-approved English language proficiency test, and must receive permission to continue registration in ESLA courses before returning to their studies.

For further information regarding English language proficiency requirements and admission, contact Admissions Services (undergraduate degree applicants) or the Registrar's Office (special student applicants). For information on English as a Second Language (ESLA) credit courses, placement, and ESLR standing, contact the School of Linguistics and Language Studies (SLaLS).

5. Dates of Entry

Students may be admitted to register in January, May and July as well as in September. (See the Academic Year section of this Calendar.)

6. Concurrent Studies

The Concurrent Studies program enables secondary school students to begin university-level study while completing any outstanding requirements for their high school diploma. The availability of the Concurrent Studies program will be of particular interest to those students in semestered schools who are not taking a full load of high school credits in their final year of study. Students in non-semestered high schools may also wish to take advantage of this opportunity in their final year if they are not taking a full credit load.

Students who wish to take advantage of the Concurrent Studies program will register as Special students.

Special students may normally enrol in a maximum of 1.0 credit in each of the fall term, winter term and summer session. With admission to a degree program, program requirements for a degree will be reduced by the number of credits successfully completed as part of the Concurrent Studies program that are appropriate to the degree. Other universities normally grant credit on admission for courses taken at Carleton as a Special student.

7. High School Applicants

Ontario

The minimum admission requirements to be considered are:

1. the completion of the OSSD; and
2. six 4U/M *courses*, including specific program prerequisites.

The overall admission average and mix of 4U/M courses required is dependent upon the degree or program for which the student is applying. Detailed admission requirements for each undergraduate degree program can be found in the "Summary of Admission Requirements" following this section.

Holding the minimum admission requirements only establishes eligibility for consideration to Carleton University programs. Admission averages and required marks will vary from year to year and will be determined by the availability of places and by the number of applicants. The overall admission average may be higher than the stated minimum requirements.

Students who feel that their high school grade average does not reflect their potential are encouraged to apply to the Enriched Support Program. For more information, see the Enriched Support Program information following the Admissions section of this Calendar.

Quebec

Students from the Province of Québec may apply for admission into first year either upon completion of the Grade 12 program or after completing work towards the Collegial diploma. (See the information on Québec CEGEPs in this section.)

Other Canadian Provinces

Applicants to degree programs at Carleton must normally be admissible to a university in their own province.

The United States

1. Applicants who have completed Grade 12 in the United States or in a U.S. overseas school will be considered for admission to first year. The Grade 12 program must include at least four academic units, and a minimum of 16 academic units must have been completed in Grades 9 to 12.
2. An average of B- or higher is required for admission. For Honours programs and some limited enrolment programs, a higher average may be required.
3. Applicants are encouraged to submit SAT or ACT scores to supplement their application for admission to the University.

Advanced Placement (AP)

Applicants who have completed AP exams with a minimum grade of 4 will be granted appropriate advanced standing credit, subject to the discretion of the appropriate Faculty, to a maximum of 3.0 credits.

International Baccalaureate (IB)

Students applying on the basis of having completed the IB diploma must possess a minimum score of 28 points. Applicants should have completed the diploma with six subjects: three higher level (HL) and three subsidiary level (SL). Students should also include the specific subject requirements for the program for which they are applying among their higher level and subsidiary level subjects. Usually we expect prerequisite courses to be at the higher level. Students with a minimum score of 28 may be given transfer credit for higher level courses with grades of 5 or higher, to a maximum of 3.0 credits.

Other High School Systems

Applicants who have completed high school diploma requirements in other than Canadian or American high school systems will be considered for admission at the appropriate level of entry. Individuals from foreign systems of education will be considered for admission to first year only if they are able to present sufficient evidence that their secondary school background is appropriate to this level of entry with respect to academic content and level of achievement.

Generally speaking, such applicants must meet requirements for admission to a university in their own country.

8. Special Requirements for Overseas Students

Translation of Documents

The University must be in receipt of all official documents by May 1. Applicants from non-English speaking countries must arrange to submit certified English translations of their academic documents.

9. Transfers from Post-Secondary Institutions: General Information

An applicant who is attending or has attended institutions of post-secondary education must present:

1. Official certified transcripts of academic records mailed directly to this University by the registrars of the institutions attended, and
2. Applicants who have taken only one year of study past the secondary school level may be required to submit an official transcript of high school marks mailed directly to Carleton University by the high school concerned.

Credit may be received for courses taken at other recognized institutions if:

1. Courses are relevant to a student's proposed program, and
2. The appropriate department recommends that such courses be credited to a student's program. Each application will be evaluated on its own merits.

Please note that performance indicators other than letter or numeric grades are not acceptable for transfer credit

(i.e. PSD [passed], CR [credit], EXP [exempt], EXM [exam], etc.).

To be eligible for graduation, students transferring from other post-secondary institutions must complete a minimum number of Carleton credits. Please see Section 2.2.2 Minimum Number of Residency Credits and Section 2.2.3 Advanced Credits in the *Academic Regulations of the University*.

10. Transfers from Post-Secondary Institutions: Universities

Students applying from other recognized universities may be admitted if they are eligible to continue at the institution from which they wish to transfer and if they meet the requirements.

Carleton University subscribes to the following General Policy on the Transfer of Course Credits, as adopted by the Council of Ontario Universities:

Acceptance of transfer credits among Ontario universities shall be based on the recognition that, while learning experiences may differ in a variety of ways, their substance may be essentially equivalent in terms of their content and rigour. Insofar as possible, acceptance of transfer should allow for the maximum recognition of previous learning experience in university-level courses.

Subject to degree, grade and program requirements, any course offered for credit by one university shall be accepted for credit by another Ontario university when there is an essential equivalency in course content.

Please contact Carleton's Admissions Services for information about transferring specific courses.

Students who apply for admission to an undergraduate degree program who already possess an undergraduate degree from either Carleton or another university, are required to complete a minimum number of Carleton credits. (See Sections 2.2.2 and 2.2.3 of the *Academic Regulations of the University*.)

11. Transfers from Post-Secondary Institutions: Ontario Colleges

Students from Ontario Colleges who have successfully completed a minimum of two terms in a two- or three-year diploma program or a four-year Applied Degree program and who present a minimum 3.0 grade point average (B standing in the Carleton University grading system) will be considered for admission to a degree program.

12. Transfers from Quebec CEGEPs

Admission Requirements

1. A CEGEP applicant who has completed successfully 12 "General" or pre-university courses will be considered for admission to first year, without advanced standing. The overall average required is dependent upon the degree or program for which the student is applying.
2. CEGEP applicants who have successfully completed more than 12 "General" or pre-university courses will be considered for admission with advanced standing based on the number of courses in excess of 12 and

not to exceed the equivalent in credits of the first year of the program to which they are admitted. The overall average required and the advanced standing credits are dependent upon the degree or program for which the student is applying.

All applicants should note that failures in their CEGEP studies can adversely affect their admissibility.

Information on prerequisite subjects and detailed admission requirements can be found at admissions.carleton.ca.

13. Provisional Admission

Some transfer applicants (those who have attended a Canadian university, an Ontario College, or a Quebec CEGEP, and have demonstrated better than average academic achievement) will automatically be considered for provisional admission. The provisional approval will be given prior to the completion of the student's current year, and will provide a detailed statement of the credits to be granted upon transfer. Admission will be confirmed upon presentation of a final transcript that indicates the successful completion of all courses with suitable standing.

14. Mature Applicants

Mature Applicants are persons who satisfy all of the following requirements:

1. are Canadian citizens or permanent residents of Canada, and
2. do not meet the normal admission requirements as published in this Calendar, and
3. have been away from full-time studies for a minimum of two calendar years, and
4. have not attended a university or college as full-time students.

Applicants who meet the definition of Mature Applicant will be considered for admission to programs in the Faculty of Arts and Social Sciences or in the Faculty of Public Affairs, or to a degree program in Engineering, Architecture, Computer Science, Humanities, Industrial Design, Mathematics, Science, Information Technology, or Social Work. Mature Applicants are not usually considered for admission to programs in Business, Journalism, Music, or Public Affairs and Policy Management. If, however, at the end of their first year in another degree program, they meet the requirements for one of the above-mentioned programs, they can apply to transfer to that program.

These applicants are required to submit biographical information and a transcript of their most recent studies.

Mature Applicants may be admitted to the first year of an undergraduate degree program if they have:

1. secondary school graduation in an academic program (the overall average required is dependent upon the degree or program for which the student is applying), or
2. completed, as a Special student at Carleton University, one appropriate full credit (or two half-credits) with C-

or higher standing in the first attempt (or in both of the first two half-credit course attempts), or

3. other academic or work experience which, in the opinion of the admissions committee, indicates a likelihood of success at university.

Note: Persons applying for admission as Mature Applicants without the prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. The prerequisite subjects (4U or equivalents) are found under Prerequisite Subjects (Section 18). All applications are reviewed on an individual basis.

Admission to the Faculty of Arts and Social Sciences, or to the Faculty of Public Affairs

Mature Applicants will normally be admitted to the first year of a B.A. or B.Co.M.S. or B.G.In.S. or B.MPD or B.Econ degree program in the Faculties of Arts and Social Sciences or Public Affairs, or the first year of the undergraduate degree program in Humanities or Social Work.

Admission to the Schools of Architecture, Computer Science, and Industrial Design

Mature Applicants can be considered for admission to the first year in the Schools of Architecture, Computer Science, or Industrial Design. The required prerequisite subjects (4U or equivalents) for Architectural Studies, Computer Science, and for Industrial Design are found under Prerequisite Subjects at the end of this section.

Persons applying for admission to these undergraduate degree programs without the prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. All applications are reviewed on an individual basis.

Admission to the Faculty of Engineering

Mature Applicants can be considered for admission to first year of a degree program in the Faculty of Engineering. The required prerequisite subjects (4U or equivalent) for Engineering are found under Prerequisite Subjects at the end of this section. A grade of 60 percent or higher is required in each prerequisite subject.

Persons applying for admission to this undergraduate degree program without the necessary prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. All applications are reviewed on an individual basis.

Admission to the Faculty of Science

Mature Applicants can be considered for admission to the first year of a program in the Faculty of Science. The required prerequisite subjects (4U or equivalent) for Science are found under Prerequisite Subjects at the end of this section.

Persons applying for admission to this undergraduate degree program without the necessary prerequisites will not normally be considered until the prerequisite subjects have been successfully completed. All applications are reviewed on an individual basis.

Mature Applicants are not usually considered for admission to Honours programs in Science. If, however, at the end of the first year of a 15.0 credit program, they meet the requirements for one of the Honours programs, they can apply to transfer to that program.

Admission to the Bachelor of Information Technology

Mature Applicants can be considered for admission to first year of the Bachelor of Information Technology. The required prerequisite subjects (4U or equivalent) for BIT are found under Prerequisite Subjects at the end of this section.

Special Students Wishing to Apply as Mature Applicants

Special students who meet all of the criteria for Mature Applicants can be considered for admission as Mature Applicants if:

1. they have completed, as a Special student, at Carleton University, one appropriate full credit (or two half-credits) with a C- or higher standing in the first attempt (or in both of the first two half-credit attempts), and
2. they are eligible to continue as Special students at Carleton University, and
3. they have completed any additional degree program prerequisite subjects that may be required for a particular program.

Mature Applicants who, as Special students at Carleton University, have not obtained a grade of C- or higher in one full credit (or two half-credits), in the first attempt (or in both of the first two half-credit attempts), can attempt to qualify for subsequent admission through additional courses as a Special student at the University.

Individuals seeking admission under the Mature Applicant status who need further information should inquire at Admissions Services.

15. Special Studies (Non-Degree)

Special students may be admitted to a degree program if their academic achievement at Carleton University indicates a reasonable probability of future academic success. Previous post-secondary studies at other institutions will also be taken into consideration at the time the application for admission is evaluated. Students with previous, unsuccessful post-secondary studies should contact Admissions Services before attempting to qualify for admission on the basis of studies as a Special student.

A Special student can normally be considered for admission after completing 4.0 credits (or the equivalent), and if the student would be *Eligible to Continue* if admitted. Students seeking admission are not considered for admission until the necessary prerequisites have been successfully completed in addition to the 4.0 approved credits (or the equivalent). The prerequisite subjects (4U/4M courses or equivalents) are found on the Admissions Services website.

If fewer than 4.0 credits have been completed, a Special student will be considered for admission after completion of:

2.0 credits (or the equivalent) with a CGPA of 8.00 or higher, or

2.5 credits (or the equivalent) with a CGPA of 7.00 or higher, or

3.0 credits (or the equivalent) with a CGPA of 6.00 or higher, or

3.5 credits (or the equivalent) with a CGPA of 5.00 or higher.

Special students wishing to apply for admission to the Faculty of Engineering, or the Schools of Architecture, Business, Computer Science, Industrial Design, Information Technology, Journalism, or Social Work, or to the Bachelor of Humanities, or Bachelor of Public Affairs and Policy Management programs, are urged to consult with Admissions Services.

16. Prerequisite Subjects

Certain degree programs require grade 4U courses (prerequisite subjects) or the equivalent as follows: (See *Summary of Admission Requirements* following this section for specific minimum averages and required marks.)

B.A., all majors

English

B.A. Biology

Chemistry

B. Architectural Studies

English

Physics

Advanced functions

Note: a portfolio is required.

B. Cognitive Science

English

B. Commerce

Advanced functions

Calculus and vectors

English

B. Communication and Media Studies

English

B. Computer Science

Advanced functions and calculus and vectors

B. Economics

English, Advanced functions

B. Engineering

Advanced functions

Chemistry

Physics

And one of: calculus and vectors or biology or earth and space science

B. Global and International Studies

English

B. Health Sciences (Honours)

Advanced functions and two of: biology, chemistry, earth and space science, physics

B. Humanities (combined Honours with Biology)

Chemistry or biology

B. Industrial Design

Advanced functions

Physics

Note: a portfolio is required and attending an information session at the School is recommended.

B. Information Technology

Interactive Multimedia and Design

Advanced functions

Note: a portfolio is required.

Information Resource Management

English and one of:

Advanced functions or

Calculus and vectors or

Mathematics of data management

Network Technology

Advanced functions or

Calculus and vectors or

Mathematics of data management

Optical Systems and Sensors

Advanced functions

B. International Business

Advanced functions

Calculus and vectors

English

B. Journalism

English

B. Journalism and Humanities

English

B. Mathematics

Advanced functions

Calculus and vectors

B. Media Production and Design

English and one of: advanced functions or calculus and vectors or mathematics of data management

B. Science (Honours)

Advanced functions and two of: biology, chemistry, earth and space science, physics

B. Science (15.0 credit/Major)

Advanced functions and two of: calculus and vectors, biology, chemistry, earth and space science, physics

17. Previous Carleton Degree Students

All former students who have been formally admitted to a degree or diploma or certificate program at the undergraduate level and who are seeking readmission either to that program or to another program are governed by differing regulations, depending upon the faculty or school that offers the program.

Please refer to the relevant program section of this Calendar or, if there is no specific entry dealing with readmission in that section, consult the Registrar's Office to determine whether or not it is necessary to submit a new application for admission. Please note that previous Carleton students applying to limited enrolment programs must apply by the published deadlines.

18. Documents

Documents submitted in support of an application for admission become the property of the University. Carleton University retains electronic students files for all students

admitted for the 2014 summer term and beyond. Original documents that have been digitized for inclusion in the student's file are destroyed in compliance with the University's privacy policies. In some cases, original documents may be returned to the applicant. Contact Admissions Services for more information.

The University may nullify an admission and revoke a registration if it finds that an applicant for admission or registration has, in the process, provided false or incomplete information.

Applicants who are unable to submit documents of previous academic studies as a result of natural disaster, armed conflict, or the securing of refugee status are subject to the following policy:

- Applicants who are unable to submit supporting documents will not be admitted. They will be encouraged to register as Special students and qualify for admission by taking courses at the University.
- Applicants who can submit official transcripts but cannot submit course descriptions will be admitted to first year if:
 - their academic record meets the standards required by the program for which they are applying, and
 - their high school studies include prerequisite subjects for admission to first year.
- Applications from candidates who can provide course descriptions based on their recollection of the courses which they have taken will be treated according to the same procedures as those which apply to applicants who cannot submit course descriptions (see 2. above).

Architectural Studies

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Architectural Studies (B.A.S.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English, Physics, and Advanced Functions. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement. Calculus and Vectors is strongly recommended.

Note: a portfolio is required. Detailed information about the portfolio requirements can be found on the Undergraduate Admissions website at admissions.carleton.ca.

Advanced Standing

Applications for admission to the second or subsequent years will be assessed on their merits. Applicants must normally be *Eligible to Continue* in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applicants will also be required to complete a portfolio which will assist in the evaluation of their suitability for the program. Detailed information about the portfolio requirements can be found at admissions.carleton.ca.

Students will not receive credit for courses graded below C-.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the B.A.S. program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Arts

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for

admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market

may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions and Calculus and Vectors are recommended.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

B.A. Honours Criminology and Criminal Justice

Admission to Criminology and Criminal Justice (CCJ) with advanced standing and transfer within the B.A. to CCJ by change of major is limited. Students require a minimum overall CGPA of 7.50 and will be admitted to the Honours program. Access to the CCJ B.A. degree is limited to CCJ B.A. Honours registered students who apply to transfer and to graduates of the Algonquin College Police Foundations program.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Cognitive Science

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Cognitive Science (B.Cog.Sci.) (Honours)
- Bachelor of Cognitive Science (B.Cog.Sci.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

The cut-off average for admission will be set annually and will normally be above the minimum requirement.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*. Advanced standing will be granted only for those subjects that are assessed as being appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Cognitive Science Honours;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Commerce

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Commerce (B.Com.) (Honours)
- Bachelor of Commerce (B.Com.)

Admission Requirements

First Year

Bachelor of Commerce (B.Com.) (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English (or *anglais*), Advanced Functions, and Calculus and Vectors. Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Bachelor of Commerce (B.Com.)

No direct entry; access is restricted.

Advanced Standing

Bachelor of Commerce (B.Com.) (Honours)

Applications for admission to the second or subsequent years will be assessed on their merits. Students must

present a major CGPA of 6.50 (C+/B-) or higher, and an overall CGPA of 8.00 (B) or higher. Advanced standing will be granted only for those courses that are determined to be appropriate.

Current Carleton students may also be assessed for admission to second and subsequent years if they present BUSI 1001 and BUSI 1002 with an average of 8.0 or higher (with no individual grade below C+) and a Major CGPA of 6.50 (C+/B-) or higher.

Applications by B.I.B. (Honours) students for admission to the second or subsequent years of B.Com. (Honours) will be assessed on their merits. Students must present a Major CGPA and an Overall CGPA consistent with the Academic Continuation Evaluation requirements for B.Com. (Honours) students. Advanced standing will be granted for those courses determined to be appropriate.

Bachelor of Commerce (B.Com.)

No direct entry. Access is restricted to students in the Bachelor of Commerce (Honours) and Bachelor of International Business (Honours). (See Regulations for Business.)

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Commerce (Honours) program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Communication and Media Studies

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Communication and Media Studies (B.Co.M.S.) (Honours)
- Bachelor of Communication and Media Studies (B.Co.M.S.)

Admission Requirements

First Year

B. Co.M.S. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

B. Co.M.S.

Access to the B.Co.M.S. degree is limited to B.Co.M.S. (Honours) students who apply to transfer.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Communication and Media Studies (Honours);
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Computer Science

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Computer Science (B.C.S.) (Honours)
- Bachelor of Computer Science (B.C.S.) (Major)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent, including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Students must typically present a minimum CGPA of 7.00 (B-) in order to be considered for admission. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected. Students will not receive credit for courses graded below C-.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Computer Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are

described in the Co-operative Education Regulations section of this Calendar.

Economics

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Economics (B.Econ.) (Honours)
- Bachelor of Economics (B.Econ.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) and 4U Advanced Functions (or equivalent). MATH 0005 taken at Carleton with

a minimum grade of C- also satisfies the Advanced Functions requirement.

Applicants who do not present with Advanced Functions or MATH 0005 may be admitted conditionally with the requirement that they complete MATH 0005 with a minimum grade of C- in their first term of study in the degree in order to be eligible to continue.

Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in a Bachelor of Economics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the *Co-operative Education Regulations* section of this Calendar.

Engineering

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite

averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Engineering (B. Eng.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include four prerequisite 4U courses: Advanced Functions, Chemistry, Physics, and one of Calculus and Vectors (recommended), or Biology, or Earth and Space Science. Although it is not an admission requirement, at least one 4U course in either English or French is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Successful applicants will have individual academic subjects, completed with grades of C- or higher, evaluated for academic standing, provided the academic work has been completed at another university or degree-granting college, or in another degree program at Carleton University.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Engineering degree;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above entrance requirements only establishes eligibility for admission to the program. Enrolment in the co-op option may be limited at the discretion of the department.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Bachelor of Global and International Studies

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum

admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Global and International Studies (B.G.In.S.) (Honours)
- Bachelor of Global and International Studies (B.G.In.S.)

Admission Requirements

First Year

B.G.In.S. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) and a FIF4U course for students applying to the Specialization in French and Francophone Studies. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

B.G.In.S.

No direct entry; access is restricted.

Advanced Standing

B.G.In.S. (Honours)

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and stream selected. Students who have completed more than 7.0 credits of post-secondary study are not typically considered for transfer.

B.G.In.S.

No direct entry. Access is restricted to students in the B.G.In.S. (Honours) program who apply to transfer.

Health Sciences

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility

for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Health Sciences (B.H.Sc.) (Honours)
- Bachelor of Health Sciences (B.H.Sc.)

Admission Requirements

First Year

B.H.Sc. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences, or Physics. Calculus and Vectors is strongly recommended. A 4U course in English is recommended.

B.H.Sc.

No direct entry; access is restricted.

Advanced Standing

B.H.Sc. (Honours)

The program maintains a number of places for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA of 9.00 (B+) or higher.

B.H.Sc.

No direct entry. Access is restricted to students in the B.H.Sc. (Honours) program who apply to transfer.

Humanities

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow

the recommendations will not be disadvantaged in the admission process.

Degrees

- B. Hum. (Honours)
- B. Hum. and Biology (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The Bachelor of Humanities and Biology option must include 4U Chemistry or 4U Biology.

Note: applicants with lower averages may be asked to submit a portfolio in support of their application. For detailed information about the portfolio and whether you are required to submit one, please consult admissions.carleton.ca.

Advanced Standing

The College maintains a number of places in second and third year for students who wish to transfer from Carleton or elsewhere. Applications will be assessed on their merits but normally an overall CGPA of 8.00 (B) or higher is required. On admission, students will not receive credit for courses graded below C-.

Transferring from the B.J.Hum. to the B.J. or B.Hum.

A student who wishes to transfer from the B.J.Hum. to the B.J. or the B.Hum. may apply through Admissions and will be accepted if, upon entry to the new program, they would be *Eligible to Continue* in the new degree program.

Industrial Design

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Industrial Design (B.I.D.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and Physics. Calculus and Vectors, Design Technology, and Visual Arts are strongly recommended.

Candidates must present a portfolio of any kind of work that could demonstrate creativity and aptitude for the study of industrial design. Detailed information about the portfolio requirements can be found at admissions.carleton.ca. Attending an information session at the School is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits and on space availability in the program. Advanced standing will be granted only for those courses that are determined to be appropriate.

Applicants will also be required to complete a portfolio which will assist in the evaluation of their suitability for the program. Detailed information about the portfolio requirements can be found at admissions.carleton.ca.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Industrial Design program;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Information Technology

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also

require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Information Technology (B.I.T.)

The Bachelor of Information Technology is offered jointly with Algonquin College.

Admission Requirements

First Year

To be eligible for admission to the first year of the Bachelor of Information Technology, the applicant must have the Ontario Secondary School Diploma (OSSD) or equivalent, including a minimum of six 4U or M courses.

For Information Resource Management: the six 4U or M courses must include English and one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

For Interactive Multimedia and Design: the six 4U or M courses must include Advanced Functions. In addition, candidates for BIT in Interactive Multimedia and Design must submit a portfolio of any kind of work that demonstrates the applicant's creativity and aptitude in design work. Detailed information about the portfolio requirements can be found at admissions.carleton.ca

For Network Technology: the six 4U or M courses must include one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management (Calculus and Vectors recommended).

For Optical Systems & Sensors: the six 4U or M courses must include Advanced Functions.

Advanced Standing

Applications for advanced standing towards the program leading to the Bachelor of Information Technology degree will be evaluated on an individual basis upon admission to the program. Students may request that additional courses be considered for advanced standing. Such requests may be made only once, and must be received by the BIT Joint Council (comprised of instructors from Carleton University and Algonquin College) by August 30 of the year in which the student is admitted to the program. Requests must follow the submission format outlined on the BIT web site.

Only university- and college-level courses in which a student has achieved a grade of C- or higher are eligible to be considered for Advanced Standing.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in one of the programs of the Information Technology degree stated in this section;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the Co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

International Business

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of International Business (B.I.B.) (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English (or *anglais*), Advanced Functions, and Calculus and Vectors. Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Advanced Standing

Applications for admission to second and subsequent years will be assessed on their merits, subject to available spaces. Advanced standing will be granted only for those courses that are determined to be appropriate. Students must present an Overall CGPA of 8.00 (equivalent to B average) or better.

Applications by B.Com. (Honours) students for admission to the second or subsequent years of B.I.B. will be assessed on their merits. Students must present a major CGPA and an overall CGPA consistent with the Academic Continuation Evaluation requirements for B.I.B. students. Advanced standing will be granted only for those courses determined to be appropriate.

The design of the B.I.B. program is premised on a full year of study abroad (at third year) after the preparations leading to it are successfully completed at Carleton. Students who are admitted with advanced standing may need to delay their study abroad requirement until first- and second-year curricula are completed, and consequently delay graduation.

Some transferred credits (normally electives) may have to be forfeited in order to meet the third-year Study Abroad Requirement of a minimum 4.0 credits completed during year abroad.

Journalism

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.J. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include 4U English. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy

the 4U English prerequisite requirement. The Bachelor of Journalism with a Concentration in Health Sciences must also include one 4U Math, and either 4U Chemistry or 4U Biology.

Note: Students who already hold an undergraduate degree in another field are not eligible to apply for the B.J. (Honours) program. These students should consult the information on the Master of Journalism or the Master of Arts in Communication in the Faculty of Graduate Studies and Research Calendar.

Advanced Standing

The School also maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA of 9.00 (B+) or higher.

Transferring from the B.J.Hum. to the B.J. or B.Hum. Degree

A student who wishes to transfer from the B.J.Hum. to the B.J. or the B.Hum. may apply through Admissions, and will be accepted if, upon entry to the new program, they would be *Eligible to Continue* (EC) in the new degree program.

Journalism and Humanities

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Journalism and Humanities (B.J.Hum.) (Honours)

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include 4U English. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Note: students who already hold an undergraduate degree are not eligible to apply for the B.J.Hum. (Honours).

Advanced Standing/Transfer into the Second Year of the B.J.Hum.

The school maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an Overall CGPA equivalent to 9.00 (B+) or higher. Transfer also requires a Core Humanities CGPA of at least 6.00. An additional year may be necessary for transfer students to complete their degree requirements. Transfers into higher years will not be considered.

Mathematics and Statistics

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Mathematics (B. Math.) (Honours)
- Bachelor of Mathematics (B.Math.)

Admission Requirements

B.Math Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

The overall admission cut-off average and/or the prerequisite course average may be considerably higher than the stated minimum requirements for admission to the combined B.Math./M.Sc. in Mathematics or Statistics.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed

as being appropriate for the program and the stream selected.

B.Math

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Mathematics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Media Production and Design

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Media Production and Design (B.M.P.D. Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

The six 4U or M courses must include English and one of Advanced Functions, or Calculus and Vectors, or Mathematics of Data Management. Advanced Functions is recommended. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those assessed to be appropriate for the program.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Media Production and Design program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Music

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and

admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.Mus. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. Although it is not an admission requirement, a 4U course in English is recommended.

Note: An audition is required; for more information on the audition, consult admissions.carleton.ca.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those courses assessed as being appropriate for the program selected.

Public Affairs and Policy Management

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.P.A.P.M. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Advanced Standing

Applications for admission with advanced standing to the program will be assessed on their merits. Normally, offers are made to students with an overall CGPA of 9.00 (B+) or higher. Students must also present at least one of the following: ECON 1001, ECON 1002, or a second-year Political Science course with a minimum grade of B.

Advanced standing will be granted only for those courses deemed appropriate to the program. Students will not receive credit for courses graded below C-.

Co-op Option

Direct Admission to the first year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and/or prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the B.P.A.P.M. (Honours) program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Science

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced

standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Social Work

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.S.W. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. Although it is not an admission requirement, a 4U course in English is strongly recommended.

Preference will be given to applicants with human service work experience, which may be met by employment and/or volunteer experience. Applicants will be asked to complete a supplementary application that will assist in the evaluation of their suitability for the program. Detailed

information about the supplementary application can be found at admissions.carleton.ca.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level, and will be considered for transfer into the B.S.W. program when spaces are available. Students who have completed an undergraduate degree are normally admitted into the program with third-year standing. Applicants will be asked to complete a supplementary application that will assist in the evaluation of their suitability for the program. Detailed information about the supplementary application can be found at admissions.carleton.ca.

Community College Applicants

Pathway agreements between the School of Social Work at Carleton University and several community colleges have been negotiated to facilitate the application of their graduates in their human or social service worker programs to Carleton's Bachelor of Social Work degree. Detailed information about these agreements can be found on the Admissions website: admissions.carleton.ca.

Certificate in Carillon Studies

Admission Requirements

To be eligible for admission to the Certificate in Carillon Studies, applicants must have:

- Successful audition (a minimum piano proficiency level equivalent to Royal Conservatory of Music Grade 9 is expected);
- Grade II Theory Rudiments, Royal Conservatory of Music (or equivalent);
- Approval of the relevant SSAC/Music Associate Performance Instructor (normally the Dominion Carillonneur);
- Approval of the Music Program.

Certificate in Multidisciplinary Studies in Mental Health and Well-Being

Admission Requirements

To be eligible for admission to the Certificate in Multidisciplinary Studies in Mental Health and Well-Being, applicants must:

- have successfully completed any undergraduate degree, or;
- meet the admission requirements for the Bachelor of Arts, or;
- be currently enrolled and *Eligible to Continue*, and meeting the CGPA thresholds defined in Section 3.1.9 of the *Academic Regulations of the University*, in any degree offered at Carleton.

Note: Students who are currently enrolled in, or have graduated from, a degree in Psychology with the Stream in Mental Health and Well-Being are not eligible for this program. Students who hold a degree in Psychology may be required to take additional credits to fulfill the

certificate residency requirement; see Section 2.2.2 of the *Academic Regulations of the University*, Minimum Number of Residency Credits.

Certificate in Nunavut Public Service Studies

Certificate

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) with a grade of 60 percent or higher. For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in the section "English Language Requirements" in the Admissions Requirements and Procedures section of this Calendar. Special consideration will be extended to other applicants under Mature Applicant regulations (see Mature and Special Admissions, in the Admissions Regulations and Procedures section of this Calendar).

Candidates may be admitted with advanced standing, but must take at least 3.0 credits for the Certificate from Carleton University.

Certificate in Professional Writing (C.P.W.)

Admission Requirements

To be eligible for admission to the Certificate in Professional Writing, applicants must present:

- Second-year standing in any Honours degree, excluding the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies;
- A Major CGPA of 7.50 or higher;
- A statement of purpose and a sample of their academic or professional writing, and;
- Permission of the Professional Writing Program.

Certificate in Science and Policy

Admission Requirements

To be eligible for admission to the Certificate in Science and Policy, applicants require:

- Completion of at least 4.0 credits in any undergraduate degree program with a minimum of a CGPA of 7.0 or higher, or;
- Completion of a college diploma (or equivalent) or a university degree in any discipline with a minimum average grade of B.

Placement in the Science or non-Science pathway will be assessed at the time of admission.

Certificate in Science Communication

Admission Requirements

Current Carleton students who wish to enrol in this certificate concurrently with their degree program should

contact the Institute of Environmental and Interdisciplinary Science.

Certificate in the Teaching of English as a Second Language (CTESL)

Admission Requirements (C.T.E.S.L.)

To be eligible for admission to the 5.0 credit CTESL program students must have already obtained a degree and have extensive experience in teaching, or are registered in an Honours degree at Carleton University with an overall CGPA of 7.00 (B-) or higher. Students registered in the concurrent CTESL program who fail to complete their degree cannot receive the CTESL.

Post-Baccalaureate Diploma

Admission

- Students must normally have an undergraduate degree in the discipline or in a related discipline with an overall GPA of 8.0 or higher,
- **OR** admission by permission of a department, school, or institute.

Students may be required to present completed university-level courses with minimum grade requirements.

Students may be granted advanced standing to a maximum of 1.0 credit. Advanced standing does not negate the 3.0-credit residency requirement.

Access to Courses

Upon admission to a post-baccalaureate diploma, students may register for all diploma/discipline-specific courses without presenting prerequisite courses that are not components of the diploma. Note that for specific diplomas the permissions in courses outside of the discipline must be arranged in advanced.

Students pursuing a post-baccalaureate diploma are treated as students with fourth-year standing.

A co-operative education option is not available in conjunction with a post-baccalaureate diploma.

Post-Baccalaureate Diploma in Accounting

Diploma

- **Post-Baccalaureate Diploma in Accounting**

Normally, students are required to have completed an undergraduate degree with a minimum B- average or higher, and have completed BUSI 1004 and BUSI 1005 (or equivalent) with a grade of C or higher.

Post-Baccalaureate Diploma in Cognitive Science

Diploma

- **Post-Baccalaureate Diploma in Cognitive Science**

Admission to this program requires the permission of the Department of Cognitive Science. Normally, students are

required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Post-Baccalaureate Diploma in Economics

Diploma

- **Post-Baccalaureate Diploma in Economics**

To be eligible for admission to the Post-Baccalaureate Diploma in Economics students must normally have:

1. an undergraduate degree with a GPA of 9.0 or higher, preferably with honours,
2. successfully completed university-level introductory (micro- and macro-) economics, calculus, and linear algebra with a grade of C+ or higher in each, and
3. permission of the Department of Economics.

Students may be granted advanced standing to a maximum of 1.0 credit. Advanced standing does not negate the 3.0 credit residency requirement.

Note: students who already hold an honours undergraduate degree in economics are encouraged to apply for admission to graduate programs in economics through the Graduate Admissions web site at graduate.carleton.ca.

Post-Baccalaureate Diploma in Professional Writing

Diploma

- **Post-Baccalaureate Diploma in Professional Writing**

To be eligible for admission to the Post-Baccalaureate Diploma in Professional Writing students must normally present an honours undergraduate degree with a GPA of 8.0 or higher.

Programs

African Studies
American Sign Language (Minor)
Anthropology
Applied Linguistics and Discourse Studies
Archaeology (Minor)
Architectural Studies
Art and Architectural History
 Art History
 History and Theory of Architecture

Biochemistry
Biology
Biotechnology
Business

Canadian Studies
Certificate in Carillon Studies
Certificate in Multidisciplinary Studies in Mental Health and Well-Being
Certificate in Nunavut Public Service Studies (C.N.P.S.S.)
Certificate in Professional Writing
Certificate in Science and Policy
Certificate in Science Communication
Certificate in the Teaching of English as a Second Language (CTESL)
Chemistry
Childhood and Youth Studies
Cognitive Science
Communication and Media Studies
Community Engagement (Minor)
Computer Science
Criminology and Criminal Justice
Critical Race Studies (Minor)

Digital Humanities (Minor)
Disability Studies (Minor)

Earth Sciences
Economics
Engineering
English
Environmental and Climate Humanities (Minor)
Environmental Science
Environmental Studies
European and Russian Studies

Film Studies
Food Science
French

Geography
Geomatics
German (Minor)
Global and International Studies
Global Development (B.G.In.S. Specialization and Stream)
Global Migration and Transnationalism (B.G.In.S. Specialization and Stream)
Greek and Roman Studies

Health Sciences
History
History and Theory of Architecture

Human Rights and Social Justice
Humanities

Indigenous Studies
Industrial Design
Information Technology
Interdisciplinary Science and Practice
International Business
Italian (Minor)

Japanese Language (Minor)
Journalism
Journalism and Humanities

Korean Language (Minor)

Latin American and Caribbean Studies
Law
Linguistics (Bachelor of Arts)
Linguistics (Bachelor of Science)

Mandarin Chinese (Minor)
Mathematics and Statistics
Media Production and Design
Medieval and Early Modern Studies (Minor)
Music

Nanoscience
Neuroscience
News Media and Information (Minor)

Open Studies (B.A. and B.Sc.)

Philosophy
Physics
Political Science
Post-Baccalaureate Diploma in Accounting
Post-Baccalaureate Diploma in Art History
Post-Baccalaureate Diploma in Cognitive Science
Post-Baccalaureate Diploma in Economics
Post-Baccalaureate Diploma in Film Studies
Post-Baccalaureate Diploma in History and Theory of Architecture
Post-Baccalaureate Diploma in Professional Writing
Psychology
Public Affairs and Policy Management

Religion
Russian (Minor)

Sexuality Studies (Minor)
Social Work
Sociology
Spanish (Minor)

Technology, Society, Environment Studies (Minor)

Undeclared

Women's and Gender Studies

African Studies

This section presents the requirements for programs in:

- African Studies B.A. Combined Honours
- African Studies B.A.
- Specialization in Africa and Globalization B.G.In.S. Honours
- Stream in Africa and Globalization B.G.In.S.
- Minor in African Studies

Program Requirements

Some of the courses listed have prerequisites that are not explicitly included in the program. Students should note that it is their responsibility to ensure that they have completed the prerequisites for any courses that they wish to take.

Other courses with relevant subject matter such as special topics or courses taken on exchange at the University of Ottawa may be substituted, with permission of the Institute.

Institute Language Requirement

The Institute requires Honours students to demonstrate proficiency in at least one language relevant to Africa other than English. The Institute will maintain a list of those languages suitable for meeting this requirement. Students may demonstrate proficiency either through the completion of any first-year course (or its approved equivalent) in a relevant language offered at Carleton or through passing a language proficiency test administered by the Institute. In the case of the language proficiency test, availability of the test in a given language will depend upon faculty resource availability.

African Studies

B.A. Combined Honours (20.0 credits)

A. Credits included in the African Studies Major CGPA (7.0 credits)

1. 1.0 credit from: Foundations	1.0
AFRI 1001 [0.5] Introduction to African Studies I & AFRI 1002 [0.5] Introduction to African Studies II or FYSM 1901 [1.0] Selected Topics in African Studies	
2. 1.0 credit from: African Regions	1.0
AFRI 2002 [0.5] The Horn of Africa	
AFRI 2003 [0.5] The Great Lakes Region of Africa	
AFRI 2004 [0.5] North Africa	
AFRI 2005 [0.5] West Africa	
AFRI 2006 [0.5] Southern Africa	
3. 1.0 credit from: Intermediate African Studies	1.0
AFRI 3001 [0.5] Globalization and Popular Culture in Africa	
AFRI 3002 [0.5] Regions in Africa: Cultures, Society, Politics	
AFRI 3003 [0.5] African Social and Political Thought	
AFRI 3004 [0.5] The African City	
AFRI 3005 [0.5] African Migrations and Diasporas	
AFRI 3100 [0.5] African Studies Abroad: Selected Topics	
AFRI 3900 [0.5] Placement	

Note: only one of AFRI 3100 or AFRI 3900 can be used towards this requirement.

4. 1.0 credit from: History	1.0
HIST 2706 [0.5] Ancient and Pre-Colonial Africa	
HIST 2707 [0.5] Modern Africa	
HIST 3717 [0.5] Gender and Sexuality in Africa	
HIST 3906 [0.5] Topics in World History (African topic)	
5. 0.5 credit from: Politics	0.5
PSCI 3100 [0.5] Politics of Development in Africa	
PSCI 3101 [0.5] Politics of War in Africa	
PSCI 4203 [0.5] Southern Africa After Apartheid	
PSCI 4207 [0.5] Globalization, Adjustment and Democracy in Africa	
6. 0.5 credit from: Anthropology	0.5
ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa	
ANTH 2660 [0.5] Ethnography of North Africa	
ANTH 4620 [0.5] Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research	
7. 0.5 credit from: Literature and Culture	0.5
AFRI 3609/ FILM 3609 [0.5] African Cinema	
ENGL 2926 [0.5] African Literatures I	
ENGL 2927 [0.5] African Literatures II	
FREN 4212 [0.5] Littératures francophones	
MUSI 4105 [0.5] Study of Musics in Africa	
8. 0.5 credit from: Context for African Studies	0.5
AFRI 3100 [0.5] African Studies Abroad: Selected Topics	
AFRI 3900 [0.5] Placement	
AFRI 4900 [0.5] Tutorial in African Studies	
ANTH 2020/ SOCI 2020 [0.5] Race and Ethnicity	
ANTH 2850 [0.5] Development and Underdevelopment	
ANTH 3020/ SOCI 3020 [0.5] Studies in Race and Ethnicity	
ANTH 3025 [0.5] Anthropology and Human Rights	
ANTH 3800 [0.5] Studies in Applied and Participatory Anthropology	
ANTH 4020/ SOCI 4020 [0.5] Advanced Studies in Race and Ethnicity	
CHST 3303 [0.5] Children's Rights	
ECON 3508 [0.5] Introduction to Economic Development	
ECON 3509 [0.5] Development Planning and Project Evaluation	
ECON 3510 [0.5] African Economic Development	
ECON 4507 [0.5] The Economics of Development	
ECON 4508 [0.5] International Aspects of Economic Development	
ENGL 2957 [0.5] Literatures of the Americas II	
ENGL 3940 [0.5] Studies in Diaspora Lit.	
ENGL 4802 [0.5] Race, Ethnicity and Canadian Lit.	
ENGL 4975 [0.5] Issues in Postcolonial Theory	
GEOG 2200 [0.5] Global Connections	
GEOG 3209 [0.5] Sustainability and Environment in the South	

HIST 2312 [0.5]	History of the Indian Ocean World
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 3111 [0.5]	History of Humanitarian Aid
HIST 3406 [0.5]	African-American Women
HIST 3710 [0.5]	Themes in Caribbean History
HUMR 3001 [0.5]	Special Topics in Human Rights
HUMR 3301 [0.5]	Racialization, Racism and Human Rights
HUMR 3303 [0.5]	Children's Rights
HUMR 3401 [0.5]	Histories of Persecution and Genocide
LAWS 3602 [0.5]	International Human Rights
LAWS 4603 [0.5]	Transitional Justice
MUSI 2005 [0.5]	Introduction to Jazz History
MUSI 2008 [0.5]	Music of the World's Peoples
MUSI 3106 [0.5]	Popular Musics of the World
MUSI 4005 [0.5]	Issues in Jazz Studies
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3805 [0.5]	Politics of Race
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
PSCI 4105 [0.5]	Selected Problems in Development in the Global South
PSCI 4409 [0.5]	Issues in Development Management
PSCI 4505 [0.5]	Transitions to Democracy
RELI 2230 [0.5]	Global Christianity
SOWK 3206 [0.5]	Community Development and Social Change in an International Context
SOWK 3207 [0.5]	Human Rights Practice in Civil Society
TSES 4011 [0.5]	Technology and Society: Development
WGST 2800 [0.5]	Intersectional Identities
9. 0.5 credit from: Honours Seminars	0.5
AFRI 4003/ CHST 4003 [0.5]	History of 'The African Child'
AFRI 4050 [0.5]	Selected Topics in African Studies
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
PSCI 4203 [0.5]	Southern Africa After Apartheid
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
10. 0.5 credit in: Capstone Honours Seminar	0.5
AFRI 4000 [0.5]	Advanced Topics in African Studies
B. Credits Not Included in the Major CGPA (13.0 credits)	13.0
11. The requirements of the other discipline must be satisfied.	
12. The Institute language requirement must be met.	
13. Sufficient free electives to make 20.0 credits for the degree.	
Total Credits	20.0

African Studies B.A. (15.0 credits)

A. Credits included in the African Studies Major CGPA (6.0 credits)

1. 1.0 credit in: Foundations	1.0
AFRI 1001 [0.5]	Introduction to African Studies I
& AFRI 1002 [0.5]	Introduction to African Studies II
or FYSM 1901 [1.0]	Selected Topics in African Studies
2. 1.0 credit from: African Regions	1.0
AFRI 2002 [0.5]	The Horn of Africa
AFRI 2003 [0.5]	The Great Lakes Region of Africa
AFRI 2004 [0.5]	North Africa
AFRI 2005 [0.5]	West Africa
AFRI 2006 [0.5]	Southern Africa
3. 1.0 credit from: Intermediate African Studies	1.0
AFRI 3001 [0.5]	Globalization and Popular Culture in Africa
AFRI 3002 [0.5]	Regions in Africa: Cultures, Society, Politics
AFRI 3003 [0.5]	African Social and Political Thought
AFRI 3004 [0.5]	The African City
AFRI 3005 [0.5]	African Migrations and Diasporas
AFRI 3100 [0.5]	African Studies Abroad: Selected Topics
AFRI 3900 [0.5]	Placement
Note: only one of AFRI 3100 or AFRI 3900 can be used towards this requirement.	
4. 0.5 credit from: History	0.5
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
HIST 2707 [0.5]	Modern Africa
HIST 3717 [0.5]	Gender and Sexuality in Africa
5. 0.5 credit from: Politics	0.5
PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3101 [0.5]	Politics of War in Africa
6. 0.5 credit from: Anthropology	0.5
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa
ANTH 2660 [0.5]	Ethnography of North Africa
7. 0.5 credit from: Literature and Culture	0.5
AFRI 3609/ FILM 3609 [0.5]	African Cinema
ENGL 2926 [0.5]	African Literatures I
ENGL 2927 [0.5]	African Literatures II
8. 0.5 credit from: African Diaspora	0.5
ENGL 2957 [0.5]	Literatures of the Americas II
ENGL 3940 [0.5]	Studies in Diaspora Lit.
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 3406 [0.5]	African-American Women
HIST 3710 [0.5]	Themes in Caribbean History
MUSI 2005 [0.5]	Introduction to Jazz History
9. 0.5 credit from: Context for African Studies	0.5
ANTH 2020/ SOC 2020 [0.5]	Race and Ethnicity
ANTH 2850 [0.5]	Development and Underdevelopment
ANTH 3020/ SOC 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3025 [0.5]	Anthropology and Human Rights

ANTH 3800 [0.5]	Studies in Applied and Participatory Anthropology
CHST 3303 [0.5]	Children's Rights
ECON 3508 [0.5]	Introduction to Economic Development
ECON 3509 [0.5]	Development Planning and Project Evaluation
ECON 3510 [0.5]	African Economic Development
GEOG 2200 [0.5]	Global Connections
GEOG 3209 [0.5]	Sustainability and Environment in the South
HIST 2312 [0.5]	History of the Indian Ocean World
HIST 3111 [0.5]	History of Humanitarian Aid
HIST 3406 [0.5]	African-American Women
HUMR 3001 [0.5]	Special Topics in Human Rights
HUMR 3301 [0.5]	Racialization, Racism and Human Rights
HUMR 3303 [0.5]	Children's Rights
HUMR 3401 [0.5]	Histories of Persecution and Genocide
LAWS 3602 [0.5]	International Human Rights
MUSI 2008 [0.5]	Music of the World's Peoples
MUSI 3106 [0.5]	Popular Musics of the World
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3805 [0.5]	Politics of Race
RELI 2230 [0.5]	Global Christianity
SOWK 3206 [0.5]	Community Development and Social Change in an International Context
SOWK 3207 [0.5]	Human Rights Practice in Civil Society
WGST 2800 [0.5]	Intersectional Identities

B. Credits Not Included in the Major CGPA (9.0 credits) 9.0

10. 9.0 credits in free electives.

11. The Institute language requirement must be met.

Total Credits 15.0

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Africa and Globalization B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5	
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory

GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
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GINS 4090 [0.5]	Honours Seminar in Global and International Studies
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2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization

Note: Language Requirement - Students choosing the Africa and Globalisation Specialization must fulfil their language requirement with a language relevant to Africa other than English. The Program Director will maintain a list of those languages suitable for this requirement.

a. 1.0 credit in: Foundations 1.0

AFRI 1001 [0.5]	Introduction to African Studies I
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AFRI 1002 [0.5]	Introduction to African Studies II
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b. 1.0 credit from: African Regions 1.0

AFRI 2002 [0.5]	The Horn of Africa
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AFRI 2003 [0.5]	The Great Lakes Region of Africa
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AFRI 2004 [0.5]	North Africa
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AFRI 2005 [0.5]	West Africa
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AFRI 2006 [0.5]	Southern Africa
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c. 1.0 credit from: Intermediate African Studies 1.0

AFRI 3001 [0.5]	Globalization and Popular Culture in Africa
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AFRI 3002 [0.5]	Regions in Africa: Cultures, Society, Politics
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AFRI 3003 [0.5]	African Social and Political Thought
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AFRI 3004 [0.5]	The African City
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AFRI 3005 [0.5]	African Migrations and Diasporas
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AFRI 3007 [0.5]	Special Topic in African Studies
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AFRI 3200 [0.5]	Thematic Topic
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d. 0.5 credit from: African Experience 0.5

AFRI 3100 [0.5]	African Studies Abroad: Selected Topics
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AFRI 3900 [0.5]	Placement
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or 0.5 credit on an approved exchange program at an African university or research institution

e. 0.5 credit from: History 0.5

HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
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HIST 2707 [0.5]	Modern Africa
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HIST 3717 [0.5]	Gender and Sexuality in Africa
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HIST 3906 [0.5]	Topics in World History (topic on Africa)
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f. 0.5 credit from: Politics 0.5

PSCI 3100 [0.5]	Politics of Development in Africa
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PSCI 3101 [0.5]	Politics of War in Africa
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g. 0.5 credit from Anthropology 0.5

ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa
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ANTH 2660 [0.5]	Ethnography of North Africa
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h. 0.5 credit from: Literature and Culture 0.5

AFRI 3609 [0.5]	African Cinema
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AFRI 3916 [0.5]	Spoken Word Poetry Workshop
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ENGL 2926 [0.5]	African Literatures I
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ENGL 3940 [0.5]	Studies in Diaspora Lit.
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FREN 4212 [0.5]	Littératures francophones
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MUSI 4105 [0.5]	Study of Musics in Africa
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i. 0.5 credit from: African Diaspora 0.5

ENGL 2957 [0.5]	Literatures of the Americas II	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
ENGL 4975 [0.5]	Issues in Postcolonial Theory	
HIST 2710 [0.5]	Introduction to Caribbean History	
HIST 3406 [0.5]	African-American Women	
HIST 3710 [0.5]	Themes in Caribbean History	
MUSI 2005 [0.5]	Introduction to Jazz History	
MUSI 4005 [0.5]	Issues in Jazz Studies	
j. 0.5 credit in: Core Honours Seminar		0.5
AFRI 4000 [0.5]	Advanced Topics in African Studies	
k. 1.0 credit from: Honours Seminars and Honours Research Essay		1.0
AFRI 4003/CHST 4003 [0.5]	History of 'The African Child'	
AFRI 4050 [0.5]	Selected Topics in African Studies	
AFRI 4060 [0.5]	African Feminisms	
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research	
GINS 4908 [1.0]	Honours Research Essay	
PSCI 4203 [0.5]	Southern Africa After Apartheid	
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa	

B. Credits Not Included in the Major CGPA (8.0 credits)

4. **8.0 credits in:** Free Electives 8.0

C. Additional Requirements

- 5. The International Experience requirement must be met.
- 6. The Language requirement must be met.

Total Credits 20.0

Stream in Africa and Globalization

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses		4.0
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream		4.0

Note: Language Requirement -- Students choosing the Africa and Globalisation Stream must fulfill their language requirement with a language relevant to Africa other than English. The Program Director will maintain a list of those languages suitable for this requirement.

a. Foundations

AFRI 1001 [0.5]	Introduction to African Studies I	
AFRI 1002 [0.5]	Introduction to African Studies II	

b. African Regions

AFRI 2002 [0.5]	The Horn of Africa	
AFRI 2003 [0.5]	The Great Lakes Region of Africa	
AFRI 2004 [0.5]	North Africa	
AFRI 2005 [0.5]	West Africa	

AFRI 2006 [0.5]	Southern Africa	
c. Intermediate African Studies		
AFRI 3001 [0.5]	Globalization and Popular Culture in Africa	
AFRI 3002 [0.5]	Regions in Africa: Cultures, Society, Politics	
AFRI 3003 [0.5]	African Social and Political Thought	
AFRI 3004 [0.5]	The African City	
AFRI 3005 [0.5]	African Migrations and Diasporas	
AFRI 3007 [0.5]	Special Topic in African Studies	
AFRI 3200 [0.5]	Thematic Topic	

d. African Experience

AFRI 3100 [0.5]	African Studies Abroad: Selected Topics	
AFRI 3900 [0.5]	Placement	

e. History

HIST 2706 [0.5]	Ancient and Pre-Colonial Africa	
HIST 2707 [0.5]	Modern Africa	
HIST 3717 [0.5]	Gender and Sexuality in Africa	
HIST 3906 [0.5]	Topics in World History (African topic)	

f. Politics

PSCI 3100 [0.5]	Politics of Development in Africa	
PSCI 3101 [0.5]	Politics of War in Africa	

g. Anthropology

ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa	
ANTH 2660 [0.5]	Ethnography of North Africa	

h. Literature and Culture

AFRI 3609 [0.5]	African Cinema	
AFRI 3916 [0.5]	Spoken Word Poetry Workshop	
ENGL 2926 [0.5]	African Literatures I	
ENGL 2927 [0.5]	African Literatures II	
FREN 4212 [0.5]	Littératures francophones	
MUSI 4105 [0.5]	Study of Musics in Africa	

i. African Diaspora

ENGL 2957 [0.5]	Literatures of the Americas II	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
HIST 2710 [0.5]	Introduction to Caribbean History	
HIST 3406 [0.5]	African-American Women	
HIST 3710 [0.5]	Themes in Caribbean History	
MUSI 2005 [0.5]	Introduction to Jazz History	

B. Credits Not Included in the Major CGPA (7.0 credits)

3. **7.0 credits in** free electives 7.0

C. Additional Requirements

- 4. The language requirement must be met.

Total Credits 15.0

Minor in African Studies (4.0 credits)

Open to all undergraduate students not in African Studies or in the B.G.In.S. Specialization or Stream in Africa and Globalization.

Requirements:

1. **1.0 credit in: Foundations 1.0**

AFRI 1001 [0.5]	Introduction to African Studies I	
& AFRI 1002 [0.5]	Introduction to African Studies II	
or FYSM 1901 [1]	Selected Topics in African Studies	

2. **0.5 credit from: African Regions 0.5**

AFRI 2002 [0.5]	The Horn of Africa	
AFRI 2003 [0.5]	The Great Lakes Region of Africa	
AFRI 2004 [0.5]	North Africa	
AFRI 2005 [0.5]	West Africa	
AFRI 2006 [0.5]	Southern Africa	
3. 0.5 credit from: Intermediate African Studies		0.5
AFRI 3001 [0.5]	Globalization and Popular Culture in Africa	
AFRI 3002 [0.5]	Regions in Africa: Cultures, Society, Politics	
AFRI 3003 [0.5]	African Social and Political Thought	
AFRI 3004 [0.5]	The African City	
AFRI 3005 [0.5]	African Migrations and Diasporas	
AFRI 3007 [0.5]	Special Topic in African Studies	
AFRI 3200 [0.5]	Thematic Topic	
4. 0.5 credit from: History		0.5
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa	
HIST 2707 [0.5]	Modern Africa	
HIST 3717 [0.5]	Gender and Sexuality in Africa	
HIST 3906 [0.5]	Topics in World History (African Topic)	
5. 0.5 credit from: Politics		0.5
PSCI 3100 [0.5]	Politics of Development in Africa	
PSCI 3101 [0.5]	Politics of War in Africa	
6. 0.5 credit from: Anthropology		0.5
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa	
ANTH 2660 [0.5]	Ethnography of North Africa	
7. 0.5 credit from: Literature, Culture and Diaspora Studies		0.5
AFRI 3609/ FILM 3609 [0.5]	African Cinema	
AFRI 3916 [0.5]	Spoken Word Poetry Workshop	
ENGL 2926 [0.5]	African Literatures I	
ENGL 2927 [0.5]	African Literatures II	
ENGL 2957 [0.5]	Literatures of the Americas II	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
HIST 2710 [0.5]	Introduction to Caribbean History	
HIST 3406 [0.5]	African-American Women	
HIST 3710 [0.5]	Themes in Caribbean History	
MUSI 2005 [0.5]	Introduction to Jazz History	

8. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have

completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC),

Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree.

The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing

part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view

the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;

2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

African Studies (AFRI) Courses

AFRI 1001 [0.5 credit]

Introduction to African Studies I

Introduction to African studies, including history, geography, literature, and the arts. Lecture three hours per week, or two-hour lecture and one hour discussion group per week.

AFRI 1002 [0.5 credit]

Introduction to African Studies II

Introduction to contemporary political, economic, and social dimensions of Africa. Lecture three hours per week.

AFRI 2002 [0.5 credit]

The Horn of Africa

The economic, social and political challenges facing the Horn of Africa, placing them in historical and global context. These countries may be discussed: Djibouti, Eritrea, Ethiopia, Somalia, Sudan, South Sudan. Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies. Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2003 [0.5 credit]

The Great Lakes Region of Africa

The economic, social and political challenges facing the Great Lake Regions of Africa, including the 1994 Rwanda genocide and its aftermath. These countries may be discussed: Burundi, Democratic Republic of Congo, Kenya, Rwanda, Tanzania, Uganda. Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies. Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2004 [0.5 credit]**North Africa**

The economic, social and political challenges facing Egypt and the Maghreb countries of North Africa, including the "Arab Spring". These countries may be discussed: Algeria, Egypt, Libya, Morocco, Mauritania, Tunisia, Western Sahara.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2005 [0.5 credit]**West Africa**

The economic, social and political challenges facing countries of West Africa, including domestic issues and regional relations. These countries may be discussed:

Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2006 [0.5 credit]**Southern Africa**

The economic, social and political challenges facing the countries of southern Africa, including the legacies of apartheid. These countries may be discussed: Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 3001 [0.5 credit]**Globalization and Popular Culture in Africa**

This course examines new popular life-worlds in Africa. Though potentially "elusive" to conceptualize, this course shows how these forms of popular culture are related to the role of youth culture and social media in an age of globalization and democratization.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3002 [0.5 credit]**Regions in Africa: Cultures, Society, Politics**

Using dominant linguistic borderlines that have shaped much of the African experience in the last century, this course will look at themes cutting across culture, geography, society and politics in francophone, anglophone, lusophone and arabophone Africa. Precludes additional credit for AFRI 2001 (no longer offered).

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3003 [0.5 credit]**African Social and Political Thought**

The African communitarian tradition. Contemporary African social and political thought, situated in their broad historical contexts.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3004 [0.5 credit]**The African City**

Historical emergence and contemporary issues of the African city.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3005 [0.5 credit]**African Migrations and Diasporas**

Movements of African peoples, from the slave trade era to the present. African diaspora communities around the world and their relationship with Africa.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3007 [0.5 credit]**Special Topic in African Studies**

A special topic related to African Studies, through one or more disciplinary lenses. Course content will vary from year to year.

Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.

Lectures three hours a week.

AFRI 3100 [0.5 credit]**African Studies Abroad: Selected Topics**

Based at one of Carleton's partner universities in Africa, course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in African studies, as selected by the instructor. Topic and location may change annually.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and approval by the Director of the Institute of African Studies.

AFRI 3200 [0.5 credit]**Thematic Topic**

A special topic that takes a thematic approach to African Studies. Course content will vary from year to year.

Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.

Lectures three hours a week.

AFRI 3609 [0.5 credit]**African Cinema**

Major moments, debates, figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the national, the continental, the diasporic, the global, race, Afro-futurism, and world cinema, interrogating in the process the very category of "African cinema."

Also listed as FILM 3609.

Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor.

Lecture and screening three hours a week, lecture one hour a week.

AFRI 3900 [0.5 credit]**Placement**

Placement for one term with an African focus.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Institute of African Studies.

AFRI 3916 [0.5 credit]**Spoken Word Poetry Workshop**

This intermediate-level workshop-based course explores traditions of spoken words poetry while requiring students to create and perform their own spoken word poems.

Includes: Experiential Learning Activity

Also listed as ENGL 3916.

Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.

Workshops three hours a week

AFRI 4000 [0.5 credit]**Advanced Topics in African Studies**

Seminar examining a specialized topic in African studies. The topic will vary from year to year.

Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Seminar three hours per week.

AFRI 4003 [0.5 credit]**History of 'The African Child'**

Students will analyze the history of the figure of 'the African child' using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.

Includes: Experiential Learning Activity

Also listed as CHST 4003.

Precludes additional credit for CHST 4001 if taken in 2014-15.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

AFRI 4050 [0.5 credit]**Selected Topics in African Studies**

Selected topics in African studies not ordinarily treated in the regular course program. The choice of topic varies from year to year. Students should check with the institute regarding the topic offered.

Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Also offered at the graduate level, with different requirements, as AFRI 5050, for which additional credit is precluded.

Seminar three hours per week.

AFRI 4060 [0.5 credit]**African Feminisms**

African feminisms as theoretical interventions and as political practice, and as diverse forms. Gender as a marker of power: status, hierarchy, social capability, and as a system of distribution of resources, responsibilities and solidarities.

Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Also offered at the graduate level, with different requirements, as AFRI 5060, for which additional credit is precluded.

Seminar three hours per week

AFRI 4900 [0.5 credit]**Tutorial in African Studies**

A tutorial on selected topics in which seminars are not available.

Prerequisite(s): Permission of the Institute of African Studies and agreement of an instructor.

American Sign Language (Minor)

This section presents the requirements for programs in:

- Minor in American Sign Language

Minor in American Sign Language (4.0 credits)

Open to all undergraduate degree students.

Requirements:

1. 3.0 credits in ASLA	3.0
2. 1.0 credit in ASLA at the 3000-level or higher	1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	

Total Credits **4.0**

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered

following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

American Sign Language (ASLA) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ASLA 1010 [0.5 credit]

First-Year American Sign Language I

For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance. Precludes additional credit for ASLA 1110. Four hours a week.

ASLA 1020 [0.5 credit]

First-Year American Sign Language II

Continuation of first-year American Sign Language. Basic communicative competence plus anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance. Precludes additional credit for ASLA 1110. Prerequisite(s): grade of C or higher in ASLA 1010, or permission of the School. Four hours a week.

ASLA 1110 [1.0 credit]

Intensive First-Year American Sign Language

For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance. Precludes additional credit for ASLA 1010 or ASLA 1020. Eight hours a week (one term).

ASLA 2010 [0.5 credit]

Second-Year American Sign Language I

Study of American Sign Language beyond the elementary level. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance.

Precludes additional credit for ASLA 2110.

Prerequisite(s): grade of C or higher in ASLA 1020, ASLA 1110, or permission of the School.

Four hours a week.

ASLA 2020 [0.5 credit]

Second-Year American Sign Language II

Continuation of second-year American Sign Language. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance.

Precludes additional credit for ASLA 2110.

Prerequisite(s): grade of C or higher in ASLA 2010, or permission of the School.

Four hours a week.

ASLA 2110 [1.0 credit]

Intensive Second-Year American Sign Language

Further study of American Sign Language to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for ASLA 2010 and ASLA 2020.

Prerequisite(s): grade of C or higher in ASLA 1020 or ASLA 1110, or permission of the School.

Eight hours a week (one term).

ASLA 3010 [0.5 credit]

Third-Year American Sign Language I

Receptive and expressive mastery of grammar and lexicon of American Sign Language. Advanced conversation skills across different registers. Advanced insight into the culture of the deaf community. Compulsory attendance.

Prerequisite(s): grade of C or higher in ASLA 2020, ASLA 2110, or permission of the School.

Three hours a week.

ASLA 3020 [0.5 credit]

Third-Year Advanced American Sign Language II

Continuation of third-year American Sign Language. Receptive and expressive mastery of grammar and lexicon of American Sign Language. Advanced conversation skills across different registers. Advanced insight into the culture of the deaf community. Compulsory attendance.

Prerequisite(s): grade of C or higher in ASLA 3010, or permission of the School.

Three hours a week.

ASLA 4010 [0.5 credit]**Fourth-Year American Sign Language I**

Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance. Prerequisite(s): grade of C or higher in ASLA 3020, or permission of the School. Three hours a week.

ASLA 4020 [0.5 credit]**Fourth-Year American Sign Language II**

Continuation of fourth-year American Sign Language. Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance. Prerequisite(s): grade of C or higher in ASLA 4010, or permission of the School. Three hours a week.

ASLA 4900 [1.0 credit]**Independent Study**

Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

ASLA 4901 [0.5 credit]**Independent Study**

Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

Anthropology

This section presents the requirements for programs in:

- Anthropology B.A. Honours
- Anthropology B.A. Combined Honours
- Anthropology B.A.
- Specialization in Globalization, Culture and Power B.G.In.S. Honours
- Stream in Globalization, Culture and Power B.G.In.S.
- Minor in Anthropology
- Minor in Community Engagement

Program Requirements**Bachelor of Arts****Anthropology****B.A. Honours (20.0 credits)****A. Credits Included in the Major CGPA (9.0 credits):**

1. 0.5 credit from:	0.5
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology

	or ANTH 1002 [0.5] Introduction to Issues in Anthropology	
2. 2.0 credits in:		2.0
ANTH 2001 [1.0]	Foundations in Socio-Cultural Anthropology	
ANTH 4900 [1.0]	Honours Research Paper in Anthropology (with a minimum 9.0 GPA or permission of instructor, or 1.0 credit in ANTH courses at the ANTH 3000-level or above)	
3. 1.0 credit from:	ANTH 2600 series	1.0
4. 1.5 credits in:		1.5
ANTH 3005 [0.5]	Ethnographic Research Methods	
ANTH 3007 [0.5]	History of Anthropological Theory	
ANTH 3008 [0.5]	Contemporary Theories in Anthropology	
5. 1.5 credits in ANTH	at the 1000 level and above	1.5
6. 1.0 credit in ANTH	and/or SOCI at the 2000 or above	1.0
7. 1.5 credits in ANTH	and/or SOCI at the 4000 or 5000 Level	1.5
B. Credits Not Included in the Major CGPA (11.0 credits):		
7. 0.5 credit in:		0.5
SOCI 1001 [0.5]	Introduction to Sociology I	
8. 8.0 credits not in SOCI	or ANTH	8.0
9. 2.5 credits in free electives		2.5
Total Credits		20.0

Anthropology**B.A. Combined Honours (20.0 credits)****A. Credits Included in the Anthropology Major CGPA (7.0 credits):**

1. 0.5 credit from:		0.5
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology	
	or ANTH 1002 [0.5] Introduction to Issues in Anthropology	
2. 1.0 credit in:		1.0
ANTH 2001 [1.0]	Foundations in Socio-Cultural Anthropology	
3. 1.0 credit from ANTH	2600 series	1.0
4. 1.5 credits in:		1.5
ANTH 3005 [0.5]	Ethnographic Research Methods	
ANTH 3007 [0.5]	History of Anthropological Theory	
ANTH 3008 [0.5]	Contemporary Theories in Anthropology	
5. 0.5 credit in ANTH	at the 1000-level and above	0.5
6. 0.5 credit in ANTH	and/or SOCI at the 2000 or above	0.5
7. 1.0 credit in ANTH	and/or SOCI at the 4000 or 5000 level	1.0
8. 1.0 credit in:		1.0
ANTH 4900 [1.0]	Honours Research Paper in Anthropology (with a minimum 9.0 GPA or permission of instructor, or 1.0 credit in ANTH courses at the ANTH 3000-level or above.)	

or

1.0 credit in ANTH at the 1000-level or higher if an Honours Essay is completed in the other discipline

B. Additional Requirements (13.0 credits): 13.0

9. The requirements for the other discipline must be satisfied

10. Sufficient credits in free electives to make 20.0 credits for the degree

11. Students are required to complete an Honours Essay. In those cases where the second discipline does not require an Honours Essay, alternative arrangements may be considered by the Co-ordinator of Honours (Anthropology)

Total Credits **20.0**

Anthropology B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 0.5 credit from:	0.5
ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology	
ANTH 1002 [0.5] Introduction to Issues in Anthropology	
2. 1.0 credit in:	1.0
ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology	
3. 1.0 credit from ANTH 2600 series	1.0
4. 1.5 credits in:	1.5
ANTH 3005 [0.5] Ethnographic Research Methods	
ANTH 3007 [0.5] History of Anthropological Theory	
ANTH 3008 [0.5] Contemporary Theories in Anthropology	
5. 1.5 credits in ANTH at the 1000-level or above	1.5
6. 0.5 credit in ANTH and/or SOCI at the 2000-level or above	0.5
B. Credits Not Included in the Major CGPA (9.0 credits)	
7. 0.5 credit in:	0.5
SOCI 1001 [0.5] Introduction to Sociology I	
8. 6.0 credits not in ANTH or SOCI	7.0
9. 2.5 credits in free electives	1.5
Total Credits	15.0

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Globalization, Culture and Power

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5] Global History	
GINS 1010 [0.5] International Law and Politics	
GINS 1020 [0.5] Ethnography, Globalization and Culture	
GINS 2000 [0.5] Ethics and Globalization	
GINS 2010 [0.5] Globalization and International Economic Issues	
GINS 2020 [0.5] Global Literatures	
GINS 3010 [0.5] Global and International Theory	
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	

GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization **7.5**

a. 2.0 credits in: Foundations

ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology

or ANTH 1002 [0.5] Introduction to Issues in Anthropology

ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology

ANTH 3005 [0.5] Ethnographic Research Methods

b. 1.0 credit from: Culture and Globalization

ANTH 2850 [0.5] Development and Underdevelopment

ANTH 3010 [0.5] Language, Culture, and Globalization

ANTH 3027 [0.5] Studies in Globalization and Human Rights

ANTH 3040 [0.5] The Global Middle Class

ANTH 3045 [0.5] Children and Childhood in a Globalized World

GEOG 2300 [0.5] Space, Place and Culture

GEOG 3021 [0.5] Geographies of Culture and Identity

c. 1.0 credit from: Ethnography

ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research

ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa

ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research

ANTH 2635 [0.5] Tradition and Modernity in the Pacific

ANTH 2640 [0.5] Andean Ethnography

ANTH 2645 [0.5] The Postcolonial Middle East

ANTH 2650 [0.5] Ethnography of Mesoamerica

ANTH 2660 [0.5] Ethnography of North Africa

ANTH 2670 [0.5] Ethnography of Brazil

ANTH 2680 [0.5] Anthropology of "Mainstream" North America

ANTH 2690 [0.5] Ethnography of a Selected Area

d. 2.0 credits from: Topical Explorations in Anthropology

ANTH 2020 [0.5] Race and Ethnicity

ANTH 2040 [0.5] Anthropology and Gender

ANTH 2060 [0.5] Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives

ANTH 2080 [0.5] Humans/Animals: the More-than-Human in Social Research

ANTH 2510 [0.5] Theories of Human Nature

ANTH 3007 [0.5] History of Anthropological Theory

ANTH 3008 [0.5] Contemporary Theories in Anthropology

ANTH 3020 [0.5] Studies in Race and Ethnicity

ANTH 3025 [0.5] Anthropology and Human Rights

ANTH 3310 [0.5] Studies in Medical Anthropology

ANTH 3355 [0.5] Anthropology and the Environment

ANTH 3550 [0.5] Studies in Visual Anthropology

ANTH 3570 [0.5]	Studies in Art, Culture and Society
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 3800 [0.5]	Studies in Applied and Participatory Anthropology
ANTH 4007 [0.5]	Advanced Studies in Anthropological Theory and Methods
ANTH 4020 [0.5]	Advanced Studies in Race and Ethnicity
ANTH 4215 [0.5]	Selected Topics in Anthropology
ANTH 4225 [0.5]	Selected Topics in Anthropology
ANTH 4500 [0.5]	Advanced Studies in Culture and Symbols
ANTH 4550 [0.5]	Advanced Studies in Visual Anthropology
ANTH 4570 [0.5]	Political Anthropology
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
e. 1.5 credits from Core Honours Seminars	
ANTH 4005 [0.5]	Health and Globalization
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology
ANTH 4109 [0.5]	Ethnography, Gender and Globalization
ANTH 4355 [0.5]	Anthropology of Natural Resources
ANTH 4560 [0.5]	Economic Anthropology
ANTH 4590 [1.0]	Capstone Seminar in Globalization, Culture, and Power
ANTH 4730 [0.5]	Colonialism and Post-Colonialism
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 Credits in: Free Electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits **20.0**

Stream in Globalization, Culture and Power B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):

1. 4.0 credits in: Core Courses 4.0	
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Foundations	
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
ANTH 1002 [0.5]	Introduction to Issues in Anthropology
ANTH 2001 [1.0]	Foundations in Socio-Cultural Anthropology
ANTH 3005 [0.5]	Ethnographic Research Methods
b. Culture and Globalization	
ANTH 2850 [0.5]	Development and Underdevelopment
ANTH 3010 [0.5]	Language, Culture, and Globalization
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3040 [0.5]	The Global Middle Class
ANTH 3045 [0.5]	Children and Childhood in a Globalized World
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
c. Ethnography	
ANTH 2610 [0.5]	Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa
ANTH 2630 [0.5]	Studies in Asian Societies: Current Issues in Anthropological Research
ANTH 2635 [0.5]	Tradition and Modernity in the Pacific
ANTH 2640 [0.5]	Andean Ethnography
ANTH 2645 [0.5]	The Postcolonial Middle East
ANTH 2650 [0.5]	Ethnography of Mesoamerica
ANTH 2660 [0.5]	Ethnography of North Africa
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 2680 [0.5]	Anthropology of "Mainstream" North America
ANTH 2690 [0.5]	Ethnography of a Selected Area
d. Topical Explorations in Anthropology	
ANTH 2020 [0.5]	Race and Ethnicity
ANTH 2040 [0.5]	Anthropology and Gender
ANTH 2060 [0.5]	Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
ANTH 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research
ANTH 2510 [0.5]	Theories of Human Nature
ANTH 3007 [0.5]	History of Anthropological Theory
ANTH 3008 [0.5]	Contemporary Theories in Anthropology
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3025 [0.5]	Anthropology and Human Rights
ANTH 3310 [0.5]	Studies in Medical Anthropology
ANTH 3355 [0.5]	Anthropology and the Environment
ANTH 3550 [0.5]	Studies in Visual Anthropology
ANTH 3570 [0.5]	Studies in Art, Culture and Society
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples

ANTH 3800 [0.5] Studies in Applied and Participatory Anthropology

B. Credits Not Included in the Major CGPA (7.0 credits):

3. **7.0 credits in:** Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Minor

Minor in Anthropology

Open to all undergraduate degree students in programs other than Anthropology or the B.G.In.S. Specialization or Stream in Globalization, Culture and Power. Students in any Sociology major should select courses carefully if they wish to use courses from the major in their minor Anthropology. Such students should always consult the department.

Requirements

1. **0.5 credit from:** 0.5

ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology
or ANTH 1002 [0.5] Introduction to Issues in Anthropology

2. **1.0 credit in:** 1.0

ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology

3. **2.5 credits in ANTH** at the 2000-level or above 2.5

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Minor in Community Engagement (4.0 credits)

This minor is open to all undergraduate degree students in any program. Students in any Sociology or Anthropology major should select courses carefully if they wish to use courses from the major in their minor. Such students should always consult the department.

Requirements:

1. **0.5 credit from:** 0.5

ANTH 2180 [0.5] Foundations in Community Engagement

SOCI 2180 [0.5] Foundations in Community Engagement

2. **0.5 credit from:** 0.5

ANTH 4171 [0.5] Community Engagement Capstone

SOCI 4171 [0.5] Community Engagement Capstone

3. **1.0 credit from** Engaging the Community courses: 1.0

AFRI 3900 [0.5] Placement

ANTH 4000 [0.5] Field Placement in Anthropology

ANTH 4100 [0.5] Ethnographic Field Course

ARTH 3701 [0.5] Art and Architecture on Site

ARTH 4701 [0.5] Art and Architecture on Site

CDNS 1101 [0.5] Power, Places and Stories in/of Odawang/Ottawa

CDNS 4800 [1.0] Internship Practicum

CRCJ 3901 [1.0] Practicum in Criminology I

CRCJ 3902 [1.0] Practicum in Criminology II

DIGH 4005 [0.5] Digital Humanities Practicum

ENST 4450 [0.5] Community-Engaged Research

GEOG 3030 [0.5] Regional Field Excursion

GEOG 4000 [0.5] Field Studies

GEOG 4450 [0.5] Community-Engaged Research

GINs 3100 [0.5] Global and International Group Project

GINs 3900 [0.5] International Placement

GINs 3901 [1.0] International Placement

GINs 3930 [0.5] Carleton International Placement

GINs 3931 [1.0] Carleton International Placement

HIST 3807 [0.5] Practicum in History

HIST 3815 [0.5] Group Practicum

HLTH 4909 [1.0] Capstone Course – Field Placement and Research Project

HUMR 4905 [0.5] Practicum Placement in Human Rights I

INDG 4001 [0.5] Indigeneity in the City

INDG 4015 [0.5] Land as a Relation

INDG 4020 [0.5] Practicum

LAWS 4905 [1.0] Full-Year Service Learning Placement

MPAD 3002 [0.5] Civic Engagement and Public Institutions I

MPAD 3003 [0.5] Civic Engagement and Public Institutions II: Minor Design Project

PHIL 2320 [0.5] Children, Literature, and Philosophy

PSCI 3906 [1.0] Full-Year Political Science Internship

PSCI 3907 [0.5] One-Term Political Science Internship

PSYC 3901 [0.5] Practicum in Psychology

PSYC 3902 [0.5] Practicum in Psychology

PSYC 3905 [1.0] Practicum in Psychology

PSYC 4330 [1.0] Community Mental Health and Well-Being

SOCI 3950 [0.5] Practicum Placement in Sociology

SOCI 4170 [0.5] Community-Engaged Sociology

WGST 4800 [0.5] Women's and Gender Studies Practicum

WGST 4801 [1.0] Women's and Gender Studies Practicum

4. **2.0 credits from** Critically Understanding Communities 2.0 courses:

AFRI 3100 [0.5] African Studies Abroad: Selected Topics

ALDS 3205 [0.5] English as a Global Language

ANTH 2020 [0.5] Race and Ethnicity

ANTH 2080 [0.5] Humans/Animals: the More-than-Human in Social Research

ANTH 2680 [0.5] Anthropology of "Mainstream" North America

ANTH 3005 [0.5] Ethnographic Research Methods

ANTH 3010 [0.5] Language, Culture, and Globalization

ANTH 3020 [0.5] Studies in Race and Ethnicity

ANTH 3025 [0.5] Anthropology and Human Rights

ANTH 3310 [0.5] Studies in Medical Anthropology

ANTH 3355 [0.5] Anthropology and the Environment

ANTH 3580 [0.5]	Anthropology of Material Culture and Museums	LAWS 2105 [0.5]	Social Justice and Human Rights
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples	LAWS 3307 [0.5]	Youth and Criminal Law
ANTH 3800 [0.5]	Studies in Applied and Participatory Anthropology	LAWS 3503 [0.5]	Equality and Discrimination
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology	LAWS 3504 [0.5]	Law and Aboriginal Peoples
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples	LAWS 3800 [0.5]	Law of Environmental Quality
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	LAWS 4001 [0.5]	Law, Family and Gender
CDNS 2210 [0.5]	Introduction to the Study of Culture in Canada	LAWS 4305 [0.5]	Criminal Justice Reform
CRST 2001 [0.5]	Introduction to Critical Race Studies	LAWS 4311 [0.5]	Human Rights in Canadian Prisons
DBST 2001 [0.5]	Disabling Society	LAWS 4503 [0.5]	Law, Disability and Society
DBST 3001 [0.5]	Disability Studies: Policy and Activism	LAWS 4504 [0.5]	Indigenous Criminal Justice
DIGH 3814 [0.5]	Crafting Digital History	LAWS 4603 [0.5]	Transitional Justice
ENGL 3608 [0.5]	Topics in Theatre Management	LAWS 4607 [0.5]	Immigration and Refugee Law
ENGL 3920 [0.5]	Literary Ecological Fieldwork	LAWS 4800 [0.5]	Environment and Social Justice
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	MUSI 2008 [0.5]	Music of the World's Peoples
FILM 2204 [0.5]	Indigenous Cinema and Media	MUSI 3103 [0.5]	Music in Canada
FYSM 1212 [0.5]	Contemporary Moral, Social, and Religious Issues	MUSI 3302 [0.5]	Music and Gender I
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	MUSI 4102 [0.5]	Ethnomusicology in Theory and Practice
GEOG 2300 [0.5]	Space, Place and Culture	MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	MUSI 4104 [0.5]	First Peoples Music in Canada
GEOG 3021 [0.5]	Geographies of Culture and Identity	MUSI 4303 [0.5]	Music and Gender II
GEOG 3023 [0.5]	Cities in a Global World	MUSI 4306 [0.5]	Music and Wellbeing in a Global Context
GEOG 3206 [0.5]	Health, Environment, and Society	PHIL 1550 [0.5]	Introduction to Ethics and Social Issues
GEOG 3404 [0.5]	Geographies of Economic Development	PHIL 2103 [0.5]	Philosophy of Human Rights
GEOG 3501 [0.5]	Geographies of the Canadian North	PHIL 2306 [0.5]	Philosophy and Feminism
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place	PHIL 2307 [0.5]	Gender and Philosophy
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change	PHIL 2380 [0.5]	Introduction to Environmental Ethics
GEOG 4323 [0.5]	Urban and Regional Planning	PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy
GINS 3300 [0.5]	Global and International Studies Abroad: Selected Topics	PHIL 3350 [0.5]	Philosophy, Ethics, and Public Affairs
HIST 2811 [0.5]	Public History from Memory to Museums	PHIL 3360 [0.5]	Philosophy, Economics, and Public Policy
HIST 3814 [0.5]	Crafting Digital History	PHIL 3380 [0.5]	Environments, Technology and Values
HLTH 2003 [0.5]	Social Determinants of Health	PSCI 2500 [0.5]	Gender and Politics
HLTH 3101 [0.5]	Global Health	PSCI 3006 [0.5]	Social Power in Canadian Politics
HLTH 3102 [0.5]	Indigenous Health in a Global World	PSYC 2301 [0.5]	Introduction to Health Psychology
HUMR 3504 [0.5]	Public Health and Human Rights	SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
IDES 2600 [0.5]	Human Factors/Ergonomics in Design	SOCI 2020 [0.5]	Race and Ethnicity
IDES 3107 [0.5]	Design and Sustainability	SOCI 2030 [0.5]	Work, Industry and Occupations
IDES 3601 [0.5]	Research for Design	SOCI 2040 [0.5]	Food, Culture and Society
INDG 3001 [0.5]	Indigenous Governance	SOCI 2043 [0.5]	Sociology of the Family
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	SOCI 2045 [0.5]	Gender and Society
		SOCI 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research
		SOCI 2170 [0.5]	Foundations in Social Justice
		SOCI 2450 [0.5]	Crime and Society
		SOCI 2702 [0.5]	Power and Social Change
		SOCI 2705 [0.5]	Popular Culture in the Digital Age
		SOCI 3010 [0.5]	Power, Oppression and Resistance
		SOCI 3019 [0.5]	Sociology of International Migration
		SOCI 3020 [0.5]	Studies in Race and Ethnicity

SOCI 3030 [0.5]	Studies in Work, Industry and Occupations: Authority and Expertise
SOCI 3038 [0.5]	Studies in Urban Sociology
SOCI 3040 [0.5]	Studies in the Sociology of Gender
SOCI 3044 [0.5]	Sociology of Sex and Sexuality
SOCI 3050 [0.5]	Studies in the Sociology of Health
SOCI 3055 [0.5]	Studies in Addictions
SOCI 3056 [0.5]	Women and Health
SOCI 3060 [0.5]	Critical Disability Studies
SOCI 3170 [0.5]	Social Justice in Action
SOCI 3300 [0.5]	Studies in the Sociology of Education
SOCI 3430 [0.5]	Studies in Collective Action and Social Movements
SOCI 3480 [0.5]	Law and Social Regulation
SOCI 4040 [0.5]	Feminist Sociology of Intersectionality
SOCI 4730 [0.5]	Colonialism and Post-Colonialism
SOWK 2005 [0.5]	Values and Ethics for Social Work
SOWK 2203 [0.5]	Introduction to Social Work Practice with Groups and Communities
SOWK 3207 [0.5]	Human Rights Practice in Civil Society
SOWK 4000 [0.5]	Social Work and Indigenous Peoples
SOWK 4003 [0.5]	Advanced Social Work Practice with Communities
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
SXST 2102 [0.5]	Sexuality, Gender, and Security
SXST 4104 [0.5]	Sexuality and Political Economy
TSES 3001 [0.5]	Technology-Society Interactions
TSES 4006 [0.5]	Technology and Society: Work
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Regulations

Anthropology Regulations

First Year Courses

Students may receive credit for ANTH 1001 and ANTH 1002, or ANTH 1003 (no longer offered). Only one of these credits will be included in the Major CGPA, the other will count against the total number of credits in sociology and/or anthropology.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits

of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science,

Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final

academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager

9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Anthropology: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Anthropology Program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, and any two of ANTH 3005, ANTH 3007 or ANTH 3008.

Students in B.A. Honours Anthropology must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: ANTH 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	W/S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Anthropology (ANTH) Courses

ANTH 1001 [0.5 credit]

Introduction to Socio-Cultural Anthropology

What does it mean to be human? Anthropologists have approached this question by using the ethnographic method to understand the diverse ways people create shared worlds of meaning. In this course students will learn how culture shapes experience, and how ethnography describes this process.

Includes: Experiential Learning Activity
Precludes additional credit for ANTH 1000 (no longer offered), HUMS 1005.

Lectures/discussions three hours a week.

ANTH 1002 [0.5 credit]

Introduction to Issues in Anthropology

This course introduces students to anthropology through in-depth consideration of selected issues facing contemporary cultures and societies. Selected issue(s) will reflect the expertise of the instructor and could include current debates related to race, gender, development, politics, economics, religion, technology, health and the environment.

Includes: Experiential Learning Activity
Precludes additional credit for ANTH 1000 (no longer offered).

Lectures/discussions three hours a week.

ANTH 2001 [1.0 credit]

Foundations in Socio-Cultural Anthropology

Exploration of basic anthropological concepts and analytical strategies through case studies. Emphasis on socio-cultural diversity as documented by ethnographic research with attention to the role of culture in articulating gender, kinship, economic and political relations.

Includes: Experiential Learning Activity
Prerequisite(s): ANTH 1001 or ANTH 1002.

Lectures and discussions three hours a week.

ANTH 2020 [0.5 credit]**Race and Ethnicity**

Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally.

Also listed as SOCI 2020.

Lectures and workshop three hours a week.

ANTH 2040 [0.5 credit]**Anthropology and Gender**

The study of gender in anthropology, including its theoretical, cross-cultural and ethnographic aspects. Emphasis on gender as a sociocultural process that is at once discursive and embodied, and that varies in distinct cultural, socio-historical, geopolitical, and economic contexts.

Includes: Experiential Learning Activity

Precludes additional credit for ANTH 2408 (no longer offered).

Lectures and workshop three hours a week.

ANTH 2060 [0.5 credit]**Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives**

Drawing on anthropological and sociological approaches, students will explore girls' lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence.

Also listed as SOCI 2060.

Prerequisite(s): second-year standing or permission of the instructor.

Two hour lecture plus one hour tutorial per week.

ANTH 2070 [0.5 credit]**Psychological Anthropology**

Exploration of the relative and the universal in relations between the psychological self and the cultural environment. Topics may include anthropology of psychiatric institutions and practices, the cultural relativity of emotions, the self in everyday life and ritual.

Lecture/discussion groups three hours a week.

ANTH 2080 [0.5 credit]**Humans/Animals: the More-than-Human in Social Research**

Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the 'more than human' in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene.

Also listed as SOCI 2080.

Lecture/discussion groups three hours per week.

ANTH 2180 [0.5 credit]**Foundations in Community Engagement**

Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.

Includes: Experiential Learning Activity

Also listed as SOCI 2180.

Prerequisite(s): Second year standing or permission of instructor.

Lecture, discussion and project work three hours a week.

ANTH 2500 [0.5 credit]**Culture and Symbols**

The representation and construction of culture through symbols. Topics may include material culture, rituals, archetypes, myths and mythmaking.

Includes: Experiential Learning Activity

Precludes additional credit for ANTH 3304 (no longer offered).

Lectures and workshop three hours a week.

ANTH 2510 [0.5 credit]**Theories of Human Nature**

Critical, cross-cultural exploration of theories of human nature. Begins with a survey of western anthropological models of human consciousness and examines scientific, philosophical and religious perspectives with reference to ethnographic research on myth, religion and science produced by western and non-western cultures.

Lectures and discussion three hours a week.

ANTH 2550 [0.5 credit]**Religion and Society**

Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes.

Includes: Experiential Learning Activity

Also listed as RELI 2736.

Lectures and workshop three hours a week.

ANTH 2610 [0.5 credit]**Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research**

Examination of a range of issues related to particular indigenous communities and regions of North America. Topics include political, socio-economic, and cultural transformations, Aboriginal title and rights, collaborative research, and other topics relevant to indigenous communities and indigenous - non-indigenous relations.

Precludes additional credit for ANTH 3610 (no longer offered).

Lecture/discussion groups three hours a week.

ANTH 2620 [0.5 credit]**Ethnography of Sub-Saharan Africa**

Examination of selected areas of contemporary Sub-Saharan Africa through current anthropological research. Topics may include war and displacement, religion, politics, international development, history, popular culture, colonialism, witchcraft, health and kinship.

Precludes additional credit for ANTH 3620 (no longer offered).

Lecture/discussion groups three hours a week.

ANTH 2630 [0.5 credit]**Studies in Asian Societies: Current Issues in Anthropological Research**

Examination of contemporary Asia through anthropological research. Topics may include cultural practices, religion, health issues, economics, politics, history, colonialism and social change. Emphasis will vary by sub-region from year to year, e.g., focusing on South, East or Southeast Asia.

Lectures and discussion three hours a week.

ANTH 2635 [0.5 credit]**Tradition and Modernity in the Pacific**

Relationships between contemporary Pacific societies and the rest of the world. Topics may include colonialism and its aftermaths, cultural revival, mining, Christianity, alternative modernities, diasporas, and indigenous media.

Lecture/discussion groups three hours a week.

ANTH 2640 [0.5 credit]**Andean Ethnography**

Ethnographic survey of the Andes. The formation of "indigenous" communities and their relation to urban centres and nation-states. Topics may include state formation, social movements, agrarian reform, political economy of food, class, ethnicity and racism, rural-urban migration, community.

Lectures and discussion three hours a week.

ANTH 2645 [0.5 credit]**The Postcolonial Middle East**

How do people live in the Middle East? What political, historical and religious forces shape their everyday life? This class draws on essays, ethnographies, and movies to challenge the narratives of chronic violence, excessive religiosity, and prehistoric misogyny that haunt our understanding of this region.

Lecture and discussion three hours a week.

ANTH 2650 [0.5 credit]**Ethnography of Mesoamerica**

Ethnographic survey of Mexico and Guatemala focusing on a variety of rural and urban communities throughout the area with emphasis on indigenous groups. Topics may include nationalism, ethnicity, social organization, gender, cosmology and material culture.

Lectures and discussion three hours a week.

ANTH 2660 [0.5 credit]**Ethnography of North Africa**

Introduction to societies and cultures of North Africa.

Topics may include: history and socio-cultural role of Islam, the relations between Arabs and Berbers, ethnography of religious institutions, ritual practices, everyday life, gender, colonialism and post-colonialism, problems of state and religion.

Lectures and discussion three hours a week.

ANTH 2670 [0.5 credit]**Ethnography of Brazil**

Examination of selected areas of contemporary Brazil through current anthropological research.

Topics may include: processes of nation-formation, colonialism, gender and sexuality, race and racism, health, everyday life, urban ethnography, popular culture, social movements, and institutions such as religion, the family and the state.

Lectures and discussion three hours a week.

ANTH 2680 [0.5 credit]**Anthropology of "Mainstream" North America**

Examination of contemporary North American society.

Topics may include social class, success myths, schooling, immigration, cities, the self, television, romance, youth sub cultures; how what is seen as "mainstream" is determined.

Lectures/discussion groups three hours a week

ANTH 2690 [0.5 credit]**Ethnography of a Selected Area**

Ethnography of a selected area. Area to be announced.

Lectures and discussion three hours a week.

ANTH 2815 [0.5 credit]**Selected Topics in Anthropology**

Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Lecture/discussion groups three hours a week.

ANTH 2825 [0.5 credit]**Selected Topics in Anthropology**

Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Lectures/discussion groups three hours a week.

ANTH 2850 [0.5 credit]**Development and Underdevelopment**

International development and its socio-cultural practices with consequences at local, national and international levels. Topics may include modernization, dependency, globalization, and development as discourse, political ecology, gender, indigenous knowledge, social movements, and non-governmental organizations.

Includes: Experiential Learning Activity

Lectures and workshop three hours a week.

ANTH 2915 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the Department for information.

ANTH 2925 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the department for information.

ANTH 3005 [0.5 credit]**Ethnographic Research Methods**

Broad overview of methods through lectures, discussion, and hands-on activities. Research design, ethics, participant-observation, interviewing and other methods, data analysis and ethnographic writing. Prepares students to apply methodological knowledge in careers and projects undertaken for the fourth-year honours research paper and/or ethnographic field course.

Includes: Experiential Learning Activity

Precludes additional credit for ANTH 2003.

Prerequisite(s): ANTH 2001 [1.0].

Lectures three hours a week.

ANTH 3007 [0.5 credit]**History of Anthropological Theory**

Analysis of the development of anthropological thought since the end of the eighteenth to the mid-twentieth century. The development of various theoretical approaches within their historical, social, intellectual and biographical contexts. The implications of these issues may be explored through ethnographies.

Precludes additional credit for ANTH 2005 and ANTH 3100.

Prerequisite(s): ANTH 2001 [1.0].

Lectures three hours a week.

ANTH 3008 [0.5 credit]**Contemporary Theories in Anthropology**

Contemporary trends in anthropological analyses.

Discussion of anthropological theory in its contemporary, interdisciplinary context.

Precludes additional credit for ANTH 3006 (no longer offered), ANTH 3100.

Prerequisite(s): ANTH 2001.

Lecture/discussion groups three hours per week.

ANTH 3010 [0.5 credit]**Language, Culture, and Globalization**

Theoretical and methodological contributions of anthropology to the study of communicative practices in a variety of social and cultural contexts. Language practices, ideologies, and globalization as they intersect with culture, power, race, ethnicity, indigeneity, gender, nationhood and political economy.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours per week.

ANTH 3020 [0.5 credit]**Studies in Race and Ethnicity**

Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity as they intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, colonialism, international migration, citizenship, and diasporic cultures.

Also listed as SOCI 3020.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures three hours a week.

ANTH 3025 [0.5 credit]**Anthropology and Human Rights**

Examines the concepts of "cultural relativism" and "universalism." What are human rights? Who has them? How do notions of "human rights" evolve? What about other, non-Western concepts of "individual," "collectivity," "rights" and "responsibilities"? What about human rights violations and abuses?.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3027 [0.5 credit]**Studies in Globalization and Human Rights**

Examination of the various dimensions and meanings of globalization and its relationship with human rights. Main emphasis will be on the implications of the emerging global economy for economic, social, political and cultural rights.

Also listed as SOCI 3027, PSCI 3802.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lectures three hours a week.

ANTH 3035 [0.5 credit]**Science, Culture and Society: Social Studies of Science**

Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.

Also listed as SOCI 3035.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3037 [0.5 credit]**Studies in Information Systems and Social Power**

Knowledge/power relations in historical and comparative perspective, with attention to information devices, techniques, and practices.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3040 [0.5 credit]**The Global Middle Class**

The growing numbers of people who could be considered “middle class” are central to both “cultural” and “economic” globalization. This course examines what it means to be middle class theoretically, historically, and cross-culturally. Prerequisite(s): second-year standing or permission of the instructor.

Lecture/discussion groups three hours a week.

ANTH 3045 [0.5 credit]**Children and Childhood in a Globalized World**

A socio-historical and cross-cultural exploration of constructions, deconstructions, and the experience of childhood in Canada and internationally. Compulsory schooling, child labour, protection and regulation in law, the commodification and equalization of childhood, children’s social movements, and the emergence of children’s rights discourses.

Also listed as SOCI 3045.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

ANTH 3215 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program. The choice of topics varies from year to year. Check with the Department regarding the topic offered.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3225 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program. The choice of topics varies from year to year. Check with the Department regarding the topic offered.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3310 [0.5 credit]**Studies in Medical Anthropology**

Cross-cultural study of the body, illness, healing, health and well-being. Sociocultural factors in the causation, diagnosis, management and meaning of illness.

Biocultural and political-economic dimensions of ill health. Ritual and symbolic healing. Ethical concerns and public health applications of anthropology.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3355 [0.5 credit]**Anthropology and the Environment**

Environmental concerns affect everyone, unevenly. How does anthropology illuminate the cultural, social, political and ecological differentiation resulting from and constituting environmental processes? The range of responses considered may address issues of resource access and exploitation, as well as transnational transformations in the concept of nature.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures three hours a week.

ANTH 3360 [0.5 credit]**Jokes, Humor, Laughter**

Anthropological inquiries into the phenomenon of humor. Psychoanalytic, semiotic and phenomenological perspectives are applied to ethnographic materials from a variety of cultural contexts.

Lecture/discussion groups three hours per week.

ANTH 3510 [0.5 credit]**Ritual**

Cross-cultural study of ritual, religious and secular, its role in various social processes and relation to other activities. Exploration of variability of ritual and the range of theories that have been developed to account for what ritual does, including intellectualist, functionalist and performative.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures and discussion three hours a week.

ANTH 3550 [0.5 credit]**Studies in Visual Anthropology**

Examination of the anthropological experience as reflected in film/video and still photography. A number of problems are considered, including selectivity, bias, the effect of the observer’s presence, and problems in reconstructing past events in film. Issues of media-literacy will be examined. Precludes additional credit for ANTH 3107 (no longer offered).

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3570 [0.5 credit]**Studies in Art, Culture and Society**

Thematic investigation of genres, forms and styles of art, culture and society. Topics may include current debates on social structure and artistic creativity; ideology, cultural memory and politics, patronage and art; cross-cultural representations, taste, social mobility and art; modernism and the avant-garde.

Also listed as SOCI 3570.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3580 [0.5 credit]**Anthropology of Material Culture and Museums**

How diverse societies are materialized in a wide range of cultural materials from clothing, housing and memorials to more ephemeral materializations such as food, gardens, dance, ritual props and music-making. Emphasis on museum practices and the cultural politics of display.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures and discussion three hours a week.

ANTH 3600 [0.5 credit]**Studies in Anthropology and Indigenous Peoples**

Problems in the interpretation and analysis of various forms of encounters between indigenous peoples and colonizing powers will be examined. Topics may include patterns and practices of contact, cultural syncretism, conquest, domination, relations of ruling, cultural hegemony, resistance and non-compliance.

Includes: Experiential Learning Activity

Precludes additional credit for ANTH 3109 (no longer offered).

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3800 [0.5 credit]**Studies in Applied and Participatory Anthropology**

History, significant approaches, and key topics of applied anthropology and participatory research. Participatory and non-participatory anthropological research on social problems within activities of intervention, which may include policy processes, development projects, evaluation exercises, impact assessments, and advocacy work.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3915 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the Department for information.

ANTH 3925 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the Department for information.

ANTH 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ANTH 4000 [0.5 credit]**Field Placement in Anthropology**

This course is intended to provide students with practical experience through a field placement equivalent to one day a week. Students are responsible to secure their field placement in a relevant organization with the approval of a Faculty member acting as Field placement coordinator.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours Anthropology standing and permission of the Department.

ANTH 4005 [0.5 credit]**Health and Globalization**

An anthropological examination of the health impacts of global processes, relationships, and movements. May include topics such as economic development and disease, migration and health, medical tourism, transnational reproduction, and the global circulation of bodies, organs, medical technologies, drugs, and pathogens.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4006 [0.5 credit]**Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology**

Examination of the breadth of critical literature on 'decolonizing methodologies' within and adjacent to anthropology in the 20th and 21st centuries. The course will equip students with an in-depth understanding of critiques of the discipline's methods and ethics while practicing an engaged anthropology.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours per week.

ANTH 4007 [0.5 credit]**Advanced Studies in Anthropological Theory and Methods**

The course examines debates in theory and methodology currently facing the discipline through a survey of leading-edge issues and approaches.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4020 [0.5 credit]**Advanced Studies in Race and Ethnicity**

An advanced seminar that explores selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors' research interests.

Also listed as SOCI 4020.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4036 [0.5 credit]**Science and Technology Studies: Selected Topics**

The course is concerned with broadening students' understanding of Science and Technology Studies (STS) by focusing on a relevant topic. Topics may vary from year to year. Students should check with the Department regarding the topic offered.

Precludes additional credit for SOCI 4401 (no longer offered).

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4100 [0.5 credit]**Ethnographic Field Course**

In this class, we explore a significant issue in our communities, learning how ethnographic methods can add new perspectives to our own experience and help us appreciate the experience of others. Students learn-through-doing their own small ethnographic projects, peer-to-peer feedback, and reflective discussion.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing or permission of the instructor.

Seminar three hours per week.

ANTH 4109 [0.5 credit]**Ethnography, Gender and Globalization**

Intersections of gender and globalization; ethnographic focus on how the movements of people, goods, ideas, and capital are transforming existing formations of gender and sexualities. Topics and approaches may vary from year to year.

Prerequisite(s): third-year standing or permission of instructor.

Also offered at the graduate level, with different requirements, as ANTH 5109, for which additional credit is precluded.

Seminar three hours a week.

ANTH 4171 [0.5 credit]**Community Engagement Capstone**

Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners.

Includes: Experiential Learning Activity

Also listed as SOCI 4171.

Prerequisite(s): ANTH 2180 and fourth year standing or permission of instructor.

Lecture, discussion and project work three hours per week.

ANTH 4200 [0.5 credit]**War, Security and Citizenship**

Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of abject and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements.

Also listed as SOCI 4200.

Prerequisite(s): fourth year standing.

Seminar three hours a week.

ANTH 4215 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program.

The choice of topic varies from year to year. Check with the department regarding the topic offered.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4225 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program.

The choice of topic varies from year to year. Check with the department regarding the topic offered.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4355 [0.5 credit]**Anthropology of Natural Resources**

Anthropology of natural resources. Topics may include economies, ecologies, cultural and social dynamics of fishing, forestry, lands, mining, oil, wildlife, at varying analytical scales, including a critical examination of the term "natural resource" itself.

Prerequisite(s): third-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as ANTH 5355, for which additional credit is precluded.

Seminars and discussions three hours a week.

ANTH 4500 [0.5 credit]**Advanced Studies in Culture and Symbols**

Contemporary debates in theory and methods regarding analysis of the symbolic processes.

Precludes additional credit for ANTH 4705 (no longer offered).

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4550 [0.5 credit]**Advanced Studies in Visual Anthropology**

Exploration of media representations of the cultural other through student projects based on contemporary anthropological analysis of cross-cultural multimedia: video, photography, mapping and the Internet. The role of media in the dissemination of anthropological research and as the subject of anthropological analysis.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4560 [0.5 credit]**Economic Anthropology**

Anthropology's holistic, comparative and critical contribution to the study of livelihood. How practices and understandings of production, circulation, consumption, and property vary cross-culturally. Relevant theoretical debates including those among formalist (neo-classical), substantivist, Marxist, and interpretive approaches over the applicability of capitalist thinking.

Prerequisite(s): third-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as ANTH 5560, for which additional credit is precluded.

Seminar three hours a week.

ANTH 4570 [0.5 credit]**Political Anthropology**

Can anthropology help us understand politics? Can ethnographic encounters help us approach political theory and political action differently? This seminar will focus on concepts (power, authority, equality) and practices (resistance, subjection, solidarity) through which anthropologists invite us to rethink the way we live together.

Prerequisite(s): third-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as ANTH 5570, for which additional credit is precluded.

Seminar three hours a week.

ANTH 4590 [1.0 credit]**Capstone Seminar in Globalization, Culture, and Power**

This course is dedicated to developing individual student research projects. Through seminar discussions, these student projects will benefit from an introduction to research design and methodologies, analysis and interpretation, as well as issues surrounding ethics, representation, and knowledge production.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the BGINS Globalization, Culture and Power program with a minimum 9.0 GPA or permission of the instructor.

Seminar three hours a week.

ANTH 4610 [0.5 credit]**Advanced Studies in Indigenous Peoples**

This research-based seminar focuses on specific conceptual and methodological issues pertaining to contemporary anthropological research involving Indigenous peoples and communities. Topical focus may vary from year to year.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4620 [0.5 credit]**Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research**

Research-based seminar that explores the issues and debates related to anthropological research in contemporary sub-Saharan Africa with emphasis on theoretical, methodological, analytical, ethical, practical and applied problems in anthropological research in that area.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4730 [0.5 credit]**Colonialism and Post-Colonialism**

Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.

Also listed as SOCI 4730.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4750 [0.5 credit]**Advanced Studies in Globalization and Citizenship**

Selected topics on the confluence of processes of globalization, development and citizenship. Examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.

Also listed as SOCI 4750.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

ANTH 4780 [0.5 credit]**Anthropology of Personhood**

Exploration of anthropological approaches to personhood and diversity in constructions of the self in various socio-cultural and historical contexts.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4900 [1.0 credit]**Honours Research Paper in Anthropology**

This course offers Honours students the opportunity to write an original research paper in their final year of study. Supported by the HRP supervisor, students develop their projects through seminar discussion addressing issues of research design, ethics, methodology, anthropological analysis, interpretation, and representation.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing.

ANTH 4915 [0.5 credit]**Tutorial in Anthropology**

Consult the Department for information.

ANTH 4925 [0.5 credit]**Tutorial in Anthropology**

Consult the Department for information.

Applied Linguistics and Discourse Studies

This section presents the requirements for programs in:

- Linguistics and Discourse Studies B.A. Combined Honours
- Applied Linguistics and Discourse Studies B.A. Honours
- Applied Linguistics and Discourse Studies B.A. Combined Honours
- Applied Linguistics and Discourse Studies B.A.
- Minor in Applied Linguistics and Discourse Studies
- Minor in Professional Writing
- Certificate in the Teaching of English as a Second Language (CTESL)
- Certificate in Professional Writing
- Post-Baccalaureate Diploma in Professional Writing
- Specialization in Teaching English in Global Contexts B.G.In.S. Honours
- Stream in Teaching English in Global Contexts B.G.In.S.

Linguistics and Discourse Studies**B.A. Combined Honours (20.0 credits)**

Honours Linguistics and Honours Applied Linguistics and Discourse Studies are combined into the Linguistics and Discourse Studies B.A. Combined Honours.

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.5 credits in:	1.5
LING 1001 [0.5]	Introduction to Linguistics I
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS
LING 1002 [0.5]	Introduction to Linguistics II
2. 1.0 credit in:	1.0
LING 2005 [0.5]	Linguistic Analysis
LING 2007 [0.5]	Phonetics
3. 2.0 credits in:	2.0
LING 3004 [0.5]	Syntax I
LING 3005 [0.5]	Morphology I

LING 3007 [0.5]	Phonology I	
LING 3505 [0.5]	Semantics	
4. 1.0 credit in	LING at the 4000 level	1.0
5. 1.0 credit in	LING, excluding LING 1100	1.0
6. 1.0 credit in:		1.0
ALDS 2201 [0.5]	Analysis of Oral Language Use	
ALDS 2202 [0.5]	Analysis of Written Language Use	
7. 1.0 credit in	ALDS at the 3000 level or above	1.0
8. 1.0 credit in	ALDS at the 4000 level	1.0
9. 2.5 credits in	ALDS	2.5
B. Additional Requirements (8.0 credits)		8.0
10. Sufficient free electives to make a total of 20.0 credits for the program		
11. School Language Proficiency Requirement must be satisfied		
Total Credits		20.0

Applied Linguistics and Discourse Studies**B.A. Honours (20.0 credits)****A. Credits Included in the Major CGPA (9.0 credits):**

1. 1.0 credit in:	1.0	
LING 1001 [0.5]	Introduction to Linguistics I	
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS	
2. 1.5 credits in:	1.5	
ALDS 2201 [0.5]	Analysis of Oral Language Use	
ALDS 2202 [0.5]	Analysis of Written Language Use	
ALDS 2203 [0.5]	Linguistic Theory and Second-Language Learning	
3. 0.5 credit from:	0.5	
ALDS 2604 [0.5]	Communication Differences and Disabilities I	
ALDS 2704 [0.5]	Bilingualism	
ALDS 2705 [0.5]	Language and Power	
LING 2007 [0.5]	Phonetics	
4. 1.5 credits from:	1.5	
ALDS 3201 [0.5]	Cross-Cultural Communication	
ALDS 3202 [0.5]	Sociolinguistics	
ALDS 3401 [0.5]	Research and Theory in Academic Writing	
ALDS 3402 [0.5]	Research and Theory in Workplace Writing	
ALDS 3405 [0.5]	Second Language Writing	
LING 3603 [0.5]	Child Language	
ALDS 3604 [0.5]	Communication Differences and Disabilities II	
ALDS 3701 [0.5]	Corpus Linguistics	
ALDS 3705 [0.5]	Adult Literacy	
ALDS 3706 [0.5]	Discourse Analysis	
ALDS 3903 [0.5]	Special Topic in Applied Linguistics and Discourse Studies	
5. 2.0 credits in	Applied Linguistics and Discourse Studies at the 4000-level	2.0
6. 2.5 credits in	Applied Linguistics and Discourse Studies, which may include	2.5
FYSM 1204 [1.0]	Language and Identity	
FYSM 1205 [1.0]	Language and Power	
B. Credits Not Included in the Major CGPA (11.0 credits):		

7. 5.0 credits not in ALDS or LING	5.0
8. 6.0 credits in free electives (maximum 2.5 in ALDS)	6.0
C. Additional Requirement:	
9. School Language Proficiency Requirement must be satisfied.	
Total Credits	20.0

Applied Linguistics and Discourse Studies B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit in:	1.0
LING 1001 [0.5] Introduction to Linguistics I	
ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
2. 1.5 credits in:	1.5
ALDS 2201 [0.5] Analysis of Oral Language Use	
ALDS 2202 [0.5] Analysis of Written Language Use	
ALDS 2203 [0.5] Linguistic Theory and Second-Language Learning	
3. 1.5 credits in ALDS at the 4000-level	1.5
4. 2.0 credits in ALDS which may include:	2.0
FYSM 1204 [1.0] Language and Identity	
FYSM 1205 [1.0] Language and Power	

B. Additional Requirements (14.0 credits) 14.0

5. The requirements for the other discipline must be met	
6. Sufficient free electives to make a total of 20.0 credits for the program	
7. School Language Proficiency Requirement must be satisfied.	

Total Credits	20.0
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Applied Linguistics and Discourse Studies B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits):

1. 1.0 credit in:	1.0
ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
LING 1001 [0.5] Introduction to Linguistics I	
2. 1.5 credits in:	1.5
ALDS 2201 [0.5] Analysis of Oral Language Use	
ALDS 2202 [0.5] Analysis of Written Language Use	
ALDS 2203 [0.5] Linguistic Theory and Second-Language Learning	
3. 0.5 credit from:	0.5
ALDS 2604 [0.5] Communication Differences and Disabilities I	
ALDS 2704 [0.5] Bilingualism	
ALDS 2705 [0.5] Language and Power	
LING 2007 [0.5] Phonetics	
4. 1.5 credits from:	1.5
ALDS 3201 [0.5] Cross-Cultural Communication	
ALDS 3202 [0.5] Sociolinguistics	
ALDS 3401 [0.5] Research and Theory in Academic Writing	
ALDS 3402 [0.5] Research and Theory in Workplace Writing	
ALDS 3405 [0.5] Second Language Writing	
ALDS 3604 [0.5] Communication Differences and Disabilities II	

ALDS 3701 [0.5] Corpus Linguistics	
ALDS 3705 [0.5] Adult Literacy	
ALDS 3706 [0.5] Discourse Analysis	
ALDS 3903 [0.5] Special Topic in Applied Linguistics and Discourse Studies	
LING 3603 [0.5] Child Language	

5. 1.5 credits in ALDS, which may include	1.5
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FYSM 1204 [1.0] Language and Identity	
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FYSM 1205 [1.0] Language and Power	
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B. Credits Not Included in the Major CGPA (9.0 credits):

6. 5.0 credits not in ALDS or LING	5.0
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7. 1.0 credits not in ALDS	1.0
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8. 3.0 credits in free electives	3.0
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C. Additional Requirements:

9. School Language Proficiency Requirement must be satisfied.	
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Total Credits	15.0
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Minor in Applied Linguistics and Discourse Studies (4.0 credits)

Open to all undergraduate degree students in programs other than Applied Linguistics and Discourse Studies.

Requirements

1. 1.0 credit in:	1.0
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ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
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LING 1001 [0.5] Introduction to Linguistics I	
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2. 1.0 credit in:	1.0
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ALDS 2201 [0.5] Analysis of Oral Language Use	
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ALDS 2202 [0.5] Analysis of Written Language Use	
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3. 1.0 credit from:	1.0
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ALDS 2203 [0.5] Linguistic Theory and Second-Language Learning	
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ALDS 2604 [0.5] Communication Differences and Disabilities I	
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ALDS 2704 [0.5] Bilingualism	
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ALDS 2705 [0.5] Language and Power	
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FYSM 1204 [1.0] Language and Identity	
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FYSM 1205 [1.0] Language and Power	
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LING 2007 [0.5] Phonetics	
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LING 3603 [0.5] Child Language	
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4. 1.0 credit in ALDS at the 3000-level or higher.	1.0
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5. The remaining requirements of the major discipline(s) and degree must be satisfied.	
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Total Credits	4.0
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Minor in Professional Writing (4.0 credits)

Students may declare only one of the Professional Writing Certificate or the Professional Writing Minor. Open to all undergraduate students.

Requirements:

1. 1.0 credit in:	1.0
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ENGL 1008 [0.5] English Grammar: Fundamentals	
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ALDS 2202 [0.5] Analysis of Written Language Use	
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2. 1.0 credit in:	1.0
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ALDS 3402/ ENGL 3909 [0.5] Research and Theory in Workplace Writing	
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ALDS 3414/ ENGL 3414 [0.5]	Introduction to Professional Writing and Editing	
3. 2.0 credits in:		2.0
ENGL 4135 [0.5]	Studies in Publishing	
ALDS 4404/ ENGL 4004 [0.5]	Writing and Knowledge-Making in the Professions	
ALDS 4414/ ENGL 4414 [0.5]	Professional Writing I	
ALDS 4415/ ENGL 4415 [0.5]	Professional Writing II	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Certificate in the Teaching of English as a Second Language (CTESL) (5.0 credits)

May be taken following successful completion of any undergraduate degree or concurrently with an Honours degree, provided the Major CGPA in the Honours program is at least 7.0.

Graduation

A candidate for the CTESL must obtain a grade of C or higher in all courses taken at Carleton University under the CTESL program.

Requirements

1. 1.0 credit in:		1.0
LING 1001 [0.5]	Introduction to Linguistics I	
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS	
Note: LING 1001 and ALDS 1001 must be taken before or concurrently with other required courses.		
2. 3.0 credits in:		3.0
ALDS 4206 [1.0]	Practicum in Teaching ESL	
ALDS 4305 [0.5]	Teaching English Language: Methodology I	
ALDS 4306 [0.5]	Teaching English as a Second Language: Methodology II	
ALDS 4602 [0.5]	Second Language Acquisition	
ALDS 4801 [0.5]	Major Structures of English	
3. 1.0 credit in ALDS, or in LING from the courses below, or any other course approved by the Supervisor of CTESL:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
LING 3601 [0.5]	Language Processing and the Brain	
LING 3603 [0.5]	Child Language	
Total Credits		5.0

Certificate in Professional Writing (5.0 credits)

Students may declare only one of the Professional Writing Certificate or the Professional Writing Minor. To be taken concurrently with an Honours degree, provided the Major CGPA in the Honours program is at least 7.50. Open to all undergraduate students not in the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies.

Graduation

A candidate for the Certificate in Professional Writing (CPW) must obtain a grade of C or higher in all courses taken at Carleton University under the CPW program.

Requirements:

1. 1.0 credit in:		1.0
ENGL 1008 [0.5]	English Grammar: Fundamentals	
ALDS 2202 [0.5]	Analysis of Written Language Use	
2. 3.0 credits in:		3.0
ALDS 3402/ ENGL 3909 [0.5]	Research and Theory in Workplace Writing	
ALDS 3414/ ENGL 3414 [0.5]	Introduction to Professional Writing and Editing	
ALDS 4404/ ENGL 4004 [0.5]	Writing and Knowledge-Making in the Professions	
ENGL 4135 [0.5]	Studies in Publishing	
ALDS 4414/ ENGL 4414 [0.5]	Professional Writing I	
ALDS 4415/ ENGL 4415 [0.5]	Professional Writing II	
3. 1.0 credit from:		1.0
ALDS 3401/ ENGL 3908 [0.5]	Research and Theory in Academic Writing	
ALDS 4403/ ENGL 4909 [0.5]	Writing and Knowledge-Making in the Disciplines	
ALDS 4405/ ENGL 4515 [0.5]	Teaching Writing in School and the Workplace	
Total Credits		5.0

Post-Baccalaureate Diploma in Professional Writing (5.0 credits)

Students applying for admission must have an Honours undergraduate degree with a GPA of 8.00 or higher. The PBD is a one-year, 5.0 credit post-degree option.

Graduation

A candidate for the post-baccalaureate diploma must obtain a grade of C- or higher in all courses taken at Carleton University under the post-baccalaureate program.

Requirements:

1. 1.0 credit in:		1.0
ENGL 1008 [0.5]	English Grammar: Fundamentals	
ALDS 2202 [0.5]	Analysis of Written Language Use	
2. 3.0 credits in:		3.0
ALDS 3402/ ENGL 3909 [0.5]	Research and Theory in Workplace Writing	
ALDS 3414/ ENGL 3414 [0.5]	Introduction to Professional Writing and Editing	
ALDS 4404/ ENGL 4004 [0.5]	Writing and Knowledge-Making in the Professions	
ENGL 4135 [0.5]	Studies in Publishing	
ALDS 4414/ ENGL 4414 [0.5]	Professional Writing I	
ALDS 4415/ ENGL 4415 [0.5]	Professional Writing II	
3. 1.0 credit from:		1.0
ALDS 3401/ ENGL 3908 [0.5]	Research and Theory in Academic Writing	
ALDS 4403/ ENGL 4909 [0.5]	Writing and Knowledge-Making in the Disciplines	

ALDS 4405/ Teaching Writing in School and the
ENGL 4515 [0.5] Workplace

Total Credits **5.0**

Specialization in Teaching English in Global Contexts

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: **4.5**

GINS 1000 [0.5] Global History
GINS 1010 [0.5] International Law and Politics
GINS 1020 [0.5] Ethnography, Globalization and Culture
GINS 2000 [0.5] Ethics and Globalization
GINS 2010 [0.5] Globalization and International Economic Issues
GINS 2020 [0.5] Global Literatures
GINS 3010 [0.5] Global and International Theory
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization

a. 1.0 credit in: Foundations **1.0**

ALDS 1001 [0.5] Language Matters: Introduction to ALDS
LING 1001 [0.5] Introduction to Linguistics I

b. 1.5 credits in: Language Analysis **1.5**

ALDS 2201 [0.5] Analysis of Oral Language Use
ALDS 2202 [0.5] Analysis of Written Language Use
ALDS 2203 [0.5] Linguistic Theory and Second-Language Learning

c. 2.5 credits from: Language Teaching Electives **2.5**

ALDS 2704 [0.5] Bilingualism
ALDS 2705 [0.5] Language and Power
ALDS 3201 [0.5] Cross-Cultural Communication
ALDS 3202 [0.5] Sociolinguistics
ALDS 3405 [0.5] Second Language Writing
ALDS 3701 [0.5] Corpus Linguistics
ALDS 4201 [0.5] Language Testing
ALDS 4306 [0.5] Teaching English as a Second Language: Methodology II
ALDS 4308 [0.5] English for Specific Purposes
ALDS 4709 [0.5] Systemic-Functional Linguistics

d. 1.5 credits in: Language Acquisition **1.5**

ALDS 3205 [0.5] English as a Global Language
ALDS 4602 [0.5] Second Language Acquisition
ALDS 4801 [0.5] Major Structures of English

e. 1.0 credits in: Language Teaching **1.0**

ALDS 4209 [0.5] Teaching English as a Foreign Language: Methodology for Global Contexts
ALDS 4305 [0.5] Teaching English Language: Methodology I

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: free electives **8.0**

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits **20.0**

Stream in Teaching English in Global Contexts

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPS (8.0 credits)

1. 4.0 credits in: **4.0**

GINS 1000 [0.5] Global History
GINS 1010 [0.5] International Law and Politics
GINS 1020 [0.5] Ethnography, Globalization and Culture
GINS 2000 [0.5] Ethics and Globalization
GINS 2010 [0.5] Globalization and International Economic Issues
GINS 2020 [0.5] Global Literatures
GINS 3010 [0.5] Global and International Theory
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream **4.0**

a. Foundations

ALDS 1001 [0.5] Language Matters: Introduction to ALDS
LING 1001 [0.5] Introduction to Linguistics I

b. Language Analysis

ALDS 2201 [0.5] Analysis of Oral Language Use
ALDS 2202 [0.5] Analysis of Written Language Use
ALDS 2203 [0.5] Linguistic Theory and Second-Language Learning

c. Language Teaching and Acquisition

ALDS 3201 [0.5] Cross-Cultural Communication
ALDS 3205 [0.5] English as a Global Language
ALDS 4602 [0.5] Second Language Acquisition
ALDS 4801 [0.5] Major Structures of English

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in: free electives **7.0**

C. Additional Requirements

4. The Language requirement must be met.

Total Credits **15.0**

School Language Proficiency Requirement

Students in B.A. Honours, Combined Honours, or 15 credit programs of the School of Linguistics and Language Studies are required, at graduation, to have a working knowledge of a language other than English. Proficiency is determined by successful completion of a 1.0 credit university course in the language or by an oral or written test given by the School.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PADM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the *Academic Regulations of the University* section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or

- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average

required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;

3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements (C.T.E.S.L.)

To be eligible for admission to the 5.0 credit CTESL program students must have already obtained a degree and have extensive experience in teaching, or are registered in an Honours degree at Carleton University with an overall CGPA of 7.00 (B-) or higher. Students registered in the concurrent CTESL program who fail to complete their degree cannot receive the CTESL.

Admission Requirements

To be eligible for admission to the Certificate in Professional Writing, applicants must present:

- Second-year standing in any Honours degree, excluding the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies;
- A Major CGPA of 7.50 or higher;

- A statement of purpose and a sample of their academic or professional writing, and;
- Permission of the Professional Writing Program.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma

- **Post-Baccalaureate Diploma in Professional Writing**

To be eligible for admission to the Post-Baccalaureate Diploma in Professional Writing students must normally present an honours undergraduate degree with a GPA of 8.0 or higher.

Applied Linguistics and Discourse Studies (ALDS) Courses

ALDS 1001 [0.5 credit]

Language Matters: Introduction to ALDS

Core topics in applied linguistics and discourse studies. First and second language acquisition; sign language; language teaching and assessment; language in society; language, identity and power; discourse analysis; written language and literacy.

Lectures three hours a week.

ALDS 2201 [0.5 credit]

Analysis of Oral Language Use

Introduction to the analysis of oral language in use; distinctions between spoken and written language; theoretical and methodological approaches such as speech act theory, ethnography of communication, conversation analysis, and discourse analysis; classroom interaction; interaction in first- and second-language acquisition; analysis of spoken language corpora.

Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 or permission of the instructor.
Lectures three hours a week.

ALDS 2202 [0.5 credit]

Analysis of Written Language Use

Introduction to the analysis of written language in use, including theoretical and methodological approaches such as rhetorical genre studies (including academic and workplace writing); adult literacy studies; text-structure analysis; discourse analysis (including critical discourse analysis); analysis of textual corpora.

Includes: Experiential Learning Activity
Prerequisite(s): ALDS 1001 or FYSM 1004 or ENGL 1000 or COMS 1000 or COMS 1001 or permission of the instructor.

Lectures three hours a week.

ALDS 2203 [0.5 credit]

Linguistic Theory and Second-Language Learning

Critical study of linguistic theory and description applied to second-language learning; a brief consideration of similarities and differences in first- and second-language development, bilingualism and types of linguistic error and their significance.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.

Lectures three hours a week.

ALDS 2604 [0.5 credit]

Communication Differences and Disabilities I

A survey course highlighting a variety of communication differences and disabilities. Specific topics vary from year to year but typically will include speech, language, fluency and hearing differences and disabilities.

Also listed as LING 2604.

Prerequisite(s): second-year standing, or permission of the instructor.

Lectures three hours a week.

ALDS 2704 [0.5 credit]

Bilingualism

The linguistic nature of bilingualism. The structure of bilingual societies and the relation between societal and individual bilingualism. The role of bilingualism in language education.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.

Lectures three hours a week.

ALDS 2705 [0.5 credit]

Language and Power

How social conditions engender different linguistic choices. Attention to linguistic resources for expressing ideological beliefs and for maintaining and reinforcing power structures in institutional and social sites.

Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1205.

Prerequisite(s): second-year standing.
Lectures three hours a week.

ALDS 3201 [0.5 credit]**Cross-Cultural Communication**

Introduction to cross-cultural communication in social, academic and professional settings. Application of theoretical perspectives to case study analysis; pedagogical/training topics as relevant to students' disciplines; collaborative work with other language and cultural groups as feasible.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, and one of LING 1001 or ALDS 1001, or permission of the School.

Lectures three hours a week.

ALDS 3202 [0.5 credit]**Sociolinguistics**

The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.

Also listed as LING 3702.

Precludes additional credit for ALDS 2701 (no longer offered).

Prerequisite(s): ALDS 1001 and third-year standing.

Lectures three hours a week.

ALDS 3205 [0.5 credit]**English as a Global Language**

The origins, development and globalization of the English language. Establishment of Standard English; spread of English in the Inner circle and in expanding circles; world Englishes; linguistic features of English varieties. English as a global language; learning and teaching English as an international language.

Includes: Experiential Learning Activity

Prerequisite(s): ALDS 1001 and LING 1001.

Seminars three hours a week.

ALDS 3301 [0.5 credit]**Introduction to Deaf Studies**

A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond.

Includes: Experiential Learning Activity

Also listed as DBST 3301.

Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A, if taken in Fall term 2016.

Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies.

Seminars three hours a week.

ALDS 3401 [0.5 credit]**Research and Theory in Academic Writing**

Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.

Includes: Experiential Learning Activity

Also listed as ENGL 3908.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ALDS 3402 [0.5 credit]**Research and Theory in Workplace Writing**

Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.

Includes: Experiential Learning Activity

Also listed as ENGL 3909.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ALDS 3405 [0.5 credit]**Second Language Writing**

Theory and practice of second language (L2) writing: how people learn to write in a second language, and how L2 writing courses for specific groups of learners can be designed.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 3414 [0.5 credit]**Introduction to Professional Writing and Editing**

The fundamental skills of professional writing and editing, including writing for specific audiences, document design, revision strategies, copyediting.

Also listed as ENGL 3414.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week.

ALDS 3604 [0.5 credit]**Communication Differences and Disabilities II**

An in-depth examination of select topics in the field of communication differences and disabilities. An emphasis is placed on theoretical accounts of specific differences and disabilities and the cross-linguistic evidence for these accounts. Specific topics may vary from year to year.

Also listed as LING 3604.

Prerequisite(s): LING 1001 and one of ALDS 2604 or LING 2604.

Lectures three hours a week.

ALDS 3701 [0.5 credit]**Corpus Linguistics**

Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.

Includes: Experiential Learning Activity

Also listed as LING 3701.

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 3705 [0.5 credit]**Adult Literacy**

The extent and social contexts of restricted literacy in Canadian society; approaches to and debates surrounding the teaching and learning of adult literacy.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ALDS 3706 [0.5 credit]**Discourse Analysis**

Principles of and studies in discourse analysis, including both conversational and textual/documentary analysis.

The major focus is on language use in structuring social relationships.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 3801 [0.5 credit]**Beyond the BA**

Students explore personal and professional transitions from undergraduate to entering the workforce or graduate school. Topics may include self-assessments, career management skills, and networking. Both academic and practical work, featuring interaction from career specialists, graduate schools, professionals, and employed ALDS graduates.

Includes: Experiential Learning Activity

Precludes additional credit for ALDS 3903C, if taken in Winter 2019; ALDS 3903B, if taken in Fall 2020 or Fall 2021.

Prerequisite(s): Third-year standing in ALDS or LING or permission of the School.

Seminars three hours a week.

ALDS 3900 [1.0 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

ALDS 3901 [0.5 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

ALDS 3903 [0.5 credit]**Special Topic in Applied Linguistics and Discourse Studies**

Selected topics in Applied Linguistics and Discourse Studies not ordinarily treated in the regular course program.

Lectures three hours per week.

ALDS 4201 [0.5 credit]**Language Testing**

The principles of test construction as applied to testing language proficiency, achievement and aptitude.

Structural, notional, discrete point and integrative tests.

Diagnostic assessment of language development, language disorders, and literacy. Students are expected to create, analyze and evaluate language tests.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 4203 [0.5 credit]**Methods and Practice in Language Pedagogy**

Integrates theory and description of language learning and teaching with practical work in one of the languages offered by the School. Requires observation in a language classroom, along with practical work facilitating in-class or language lab activities, or developing teaching materials.

Includes: Experiential Learning Activity

Precludes additional credit for ALDS 3803 (no longer offered).

Prerequisite(s): permission of the language instructor for the language class in which practical work will be conducted; proficiency in the language in question, as determined by either completion of the prerequisites for 4010 of that language, or assessment by the language instructor; or permission of the School.

Seminars and in-class practicum.

ALDS 4206 [1.0 credit]**Practicum in Teaching ESL**

Investigates the processes of classroom learning with observation and some teaching experience in ESL classes. Normally taken concurrently with ALDS 4305 and ALDS 4306.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the concurrent CTESL program, or enrolment in the post-graduate CTESL program.

ALDS 4207 [0.5 credit]**ESL Literacy**

The nature of everyday literacy and literacy skills. Analyzing the structure of everyday literacy texts and demands. Issues in literacy for second-language learners. Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4208 [0.5 credit]**Languages for Specific Purposes**

An introduction to Languages for Specific Purposes - language instruction tailored to specific groups of learners, e.g. English for Science, for Business, for the Workplace, for Academic Purposes. Research and teaching methodology. Emphasis on EAP/ESP research and instruction at Carleton.
Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Also offered at the graduate level, with different requirements, as ALDS 5208, for which additional credit is precluded.
Lectures three hours a week.

ALDS 4209 [0.5 credit]**Teaching English as a Foreign Language: Methodology for Global Contexts**

An introduction to the principles of teaching language in a foreign-language context; review of teaching approaches; practical examination, development and evaluation of instructional materials.
Includes: Experiential Learning Activity
Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, the BGIInS Specialization in Teaching English in Global Contexts, or permission of the instructor.
Lectures three hours a week.

ALDS 4305 [0.5 credit]**Teaching English Language: Methodology I**

Classification of classroom teaching methods and materials; adaptation of teaching materials for particular situations; creation of teaching materials; teaching techniques and strategies.
Includes: Experiential Learning Activity
Precludes additional credit for ALDS 4205.
Prerequisite(s): fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or the BGIInS Specialization in Teaching English in Global Contexts, or permission of the instructor.
Seminars four hours a week.

ALDS 4306 [0.5 credit]**Teaching English as a Second Language: Methodology II**

Classification of classroom teaching methods and materials used in an international context; adaptation of teaching materials for particular situations; creation of teaching materials for global English language education; teaching techniques and strategies.
Includes: Experiential Learning Activity
Precludes additional credit for ALDS 4205.
Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or permission of the instructor.
Seminars four hours a week.

ALDS 4308 [0.5 credit]**English for Specific Purposes**

An introduction to English for Specific Purposes – English language instruction tailored to specific groups of learners (e.g., English for Academic Purposes, and English for a range of specific occupational and professional purposes). This course explores effective practices in course and materials design.
Prerequisite(s): ALDS 2203 or ALDS 4602 and third-year standing in the BGIInS Honours Specialization in Teaching English in Global Contexts, or enrolment in the CTESL program, or permission of the instructor.
Seminars three hours a week.

ALDS 4403 [0.5 credit]**Writing and Knowledge-Making in the Disciplines**

The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.
Includes: Experiential Learning Activity
Also listed as ENGL 4909.
Prerequisite(s): third-year standing.
Lectures three hours a week.

ALDS 4404 [0.5 credit]**Writing and Knowledge-Making in the Professions**

The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. How the goals, values, and assumptions of different professions shape their writing in distinctive ways and the implications for theory, research, and practice.
Includes: Experiential Learning Activity
Also listed as ENGL 4004.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week.

ALDS 4405 [0.5 credit]**Teaching Writing in School and the Workplace**

Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching.

Includes: Experiential Learning Activity

Also listed as ENGL 4515.

Prerequisite(s): third-year standing, or permission of the instructor.

Lectures three hours a week.

ALDS 4414 [0.5 credit]**Professional Writing I**

The role of writing in government and NGOs.

Consideration of various genres, practices and styles of government and NGO writing, including, grant proposals, administrative reports, press releases, briefing notes, recommendation reports.

Includes: Experiential Learning Activity

Also listed as ENGL 4414.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week. May include a work placement.

ALDS 4415 [0.5 credit]**Professional Writing II**

The role of writing in science-related fields and in the health professions. Consideration of various genres, practices and styles of scientific and health-related writing, including, research reports, grant proposals, case reports, popularizations of science, press releases.

Includes: Experiential Learning Activity

Also listed as ENGL 4415.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week. May include a work placement.

ALDS 4602 [0.5 credit]**Second Language Acquisition**

Current issues in second language acquisition; factors influencing success in acquiring a second or additional language, discourse and culture. Emphasis on theoretical concepts, empirical research, and practical implications for language teaching.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 4606 [0.5 credit]**Statistics for Language Research**

Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.

Includes: Experiential Learning Activity

Also listed as LING 4606.

Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.

Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as ALDS 5604 and LING 5606, for which additional credit is precluded.

Seminars three hours a week.

ALDS 4709 [0.5 credit]**Systemic-Functional Linguistics**

Functions of language in the exchange of meanings between people in a wide variety of communicative situations. Semantic and syntactic resources at risk in these different contexts. Interactions between language and the social context.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or Linguistics, or Journalism, or Communication Studies, or permission of the instructor.

Also offered at the graduate level, with different requirements, as ALDS 5102, for which additional credit is precluded.

Lectures three hours a week.

ALDS 4801 [0.5 credit]**Major Structures of English**

This course is intended to familiarize students with the structure of the English language, highlighting important contrasts between English and other languages as well as grammatical difficulties for ESL learners.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 4900 [1.0 credit]**Independent Study**

Permits fourth-year Honours students to pursue their interests in a selected area of applied linguistics and discourse studies.

Prerequisite(s): permission of the instructor.

ALDS 4901 [0.5 credit]**Independent Study**

Permits fourth-year Honours students to pursue their interests in a selected area of applied linguistics and discourse studies.

Prerequisite(s): permission of the instructor.

ALDS 4906 [0.5 credit]**Special Topic in Applied Linguistics and Discourse Studies**

Selected topics in applied linguistics and discourse studies. Contents of this course vary from year to year. Lectures three hours a week.

ALDS 4908 [1.0 credit]**Honours Project in Applied Linguistics and Discourse Studies**

Individually designed intensive practicum or research experience. May involve (a) practicum or work study placement in writing or literacy studies, language syllabus design or test development; (b) intensive research activity in an area of Applied Linguistics and Discourse Studies. All projects include substantial written work.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Applied Linguistics and Discourse Studies, a CGPA of 9.00 or better, or permission of the School.

Tutorial hours arranged.

Archaeology (Minor)

This section presents the requirements for programs in:

- Minor in Archaeology

Minor in Archaeology (4.0 credits)

Open to all undergraduate degree students.

Requirements:

- | | |
|---|------------|
| 1. 1.0 credit in: | 1.0 |
| ARCY 1008 [0.5] Introduction to Archaeology I
& ARCY 1009 [0.5] Introduction to Archaeology II | |
| Or | |
| CLCV 1008 [0.5] Introduction to Archaeology I
& CLCV 1009 [0.5] Introduction to Archaeology II | |
| 2. 1.0 credit in ARCY or approved electives at the 2000 level | 1.0 |
| 3. 1.0 credit in ARCY or approved electives at the 3000 level | 1.0 |
| 4. 1.0 credit in ARCY or approved electives at any level | 1.0 |
| 5. The remaining requirements of the major discipline(s) and degree must be satisfied. | |

Total Credits **4.0**

Approved Archaeology Electives

Other courses may be substituted for those specified below, when material on archaeology is central to the course. Such substitutions must be individually approved by the Greek and Roman Studies Program Coordinator.

Note: "R" designates that the course is repeatable.

Anthropology

ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums

Art History

ARTH 1100 [0.0]	Art and Society: Prehistory to the Renaissance
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ARTH 1101 [0.0]	Art and Society: Renaissance to the Present
ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present
ARTH 2102 [0.5]	Greek Art and Archaeology
ARTH 2105 [0.5]	Roman Art and Archaeology
ARTH 2202 [0.5]	Medieval Architecture and Art
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries
ARTH 3102 [0.5]	Studies in Greek Art
ARTH 3105 [0.5]	Studies in Roman Art

Biology

BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2005 [0.5]	Human Biology

Chemistry

CHEM 1007 [0.5]	Chemistry of Art and Artifacts
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Digital Humanities

DIGH 2035 [0.5]	Technology, Culture and Society
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Greek and Roman Studies

CLCV 2303/ ARTH 2102 [0.5]	Greek Art and Archaeology
CLCV 2304/ ARTH 2105 [0.5]	Roman Art and Archaeology
CLCV 2305/ TSES 2305 [1.0]	Ancient Science and Technology
CLCV 3301 [0.5]	Field Work I: Greek and Roman World (R)
CLCV 3306/ ARTH 3102/ RELI 3732 [0.5]	Studies in Greek Art (R)
CLCV 3307/ ARTH 3105/ RELI 3733 [0.5]	Studies in Roman Art (R)
CLCV 3400 [0.5]	Greek and Roman Studies Abroad (R)
CLCV 4000 [0.5]	Field Work II: Greek and Roman World (R)

Earth Sciences

ERTH 2312 [0.5]	Paleontology
ERTH 2401 [0.5]	Dinosaurs
ERTH 2415 [0.5]	Natural Disasters
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3113 [0.5]	Geology of Human Origins

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3102 [0.5]	Geomorphology
GEOG 3108 [0.5]	Soil Properties

Geomatics

GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution
GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons

GEOM 3002 [0.5] Introduction to Remote Sensing

Religion

RELI 3732 [0.5] Studies in Greek Art

RELI 3733 [0.5] Studies in Roman Art

Sociology

SOCI 2035 [0.5] Technology, Culture and Society

Technology, Society, Environment Studies

TSES 2305/ Ancient Science and Technology

CLCV 2305 [1.0]

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Archaeology (ARCY) Courses

ARCY 1008 [0.5 credit]

Introduction to Archaeology I

Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater.

Also listed as CLCV 1008.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week

ARCY 1009 [0.5 credit]

Introduction to Archaeology II

Continues the examination of various aspects of field archaeology begun in ARCY 1008 (also CLCV 1008). This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches.

Also listed as CLCV 1009.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week.

ARCY 3000 [0.5 credit]

Archaeological Field Work I

Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey). They will learn archaeological documentation and the analysis, recording, and processing of finds. The field project may be anywhere in the world and any time period.

Includes: Experiential Learning Activity

Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.

Field work

ARCY 3301 [0.5 credit]

Field Work I: Greek and Roman World

Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.

Includes: Experiential Learning Activity

Also listed as CLCV 3301.

Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.

Field work

ARCY 4000 [0.5 credit]

Field Work II: Greek and Roman World

Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.

Includes: Experiential Learning Activity

Also listed as CLCV 4000.

Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.

Field Work

ARCY 4100 [0.5 credit]

Archaeological Field Work II

Students participate for a minimum of three weeks in a position of responsibility on an archaeological field project (eg. trench supervisor or lab assistant). The field project may be anywhere in the world and any time period.

Includes: Experiential Learning Activity

Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.

Field work

Architectural Studies

This section presents the requirements for programs in:

- Design B.A.S.
- Urbanism B.A.S. Honours
- Conservation and Sustainability B.A.S. Honours

The Azrieli School of Architecture and Urbanism cooperates with the School for Studies in Art and Culture in offering the History and Theory of Architecture B.A. and B.A. Honours programs (see the Art History program section of this Calendar for details).

Course Categories

Urbanism Core Electives

AFRI 3004 [0.5] The African City

ARCC 1202 [0.5] History of Structures

ARCH 4002 [0.5] Canadian Architecture

ARCH 4105 [0.5] Theories of Landscape Design

ARCH 4206 [0.5] Recycling Architecture in Canada and Abroad

ARCH 4502 [0.5]	Research and Criticism
ARCH 4505 [0.5]	Seminar in Theory and History
ARCU 2100 [0.5]	Special Topics in Urbanism
ARCU 3405 [0.5]	Urban Design
ARCU 3902 [0.5]	Urban Studies
ARCU 4400 [0.5]	City Organization and Planning
ARCU 4808 [0.5]	Independent Study
ARCU 4901 [0.5]	Topics in Applied Urbanism
ARTH 2610 [0.0]	Twentieth-Century Architecture
ARTH 3710 [0.5]	Architecture and Empire
ARTH 3810 [0.5]	A Closer Look at the Designed Environment
CDNS 2300 [0.5]	Nationalism and Multiculturalism in Canada
CDNS 2400 [0.5]	Heritage Places and Practices in Canada
CDNS 4400 [0.5]	Space, Landscape and Identity in Canada
CDNS 4403 [0.5]	Heritage Conservation and Sustainability in Canada
CIVE 2005 [0.5]	Architectural Technology 2
CIVE 4303 [0.5]	Urban Planning
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions
ENST 4022 [0.5]	Seminar in People, Resources, and Environmental Change
FYSM 1107 [1.0]	Social Justice and the City
GEOG 1020 [0.5]	People, Places and Environments
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3023 [0.5]	Cities in a Global World
GEOG 4007 [0.5]	Special Topics in Geography and Environmental Studies
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change
GEOG 4023 [0.5]	Seminar in Special Topics on the City
GEOG 4304 [0.5]	Transportation Engineering and Planning
GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons
GEOM 3007 [0.5]	Cartographic Theory and Design
HIST 3209 [0.5]	Canadian Urban History
HUMR 3002 [0.5]	Right to the City

Conservation and Sustainability Core Electives

ARCC 4103 [0.5]	Energy and Form
ARCC 4300 [0.5]	Building Materials
ARCC 4400 [0.5]	Design for Construction
ARCC 4801 [0.5]	Architectural Technology
ARCH 3902 [0.5]	Theory of Architecture
ARCH 4004 [0.5]	Architectural Theory
ARCH 4105 [0.5]	Theories of Landscape Design
ARCH 4201 [0.5]	History of Modern Housing

ARCH 4206 [0.5]	Recycling Architecture in Canada and Abroad
ARCH 4502 [0.5]	Research and Criticism
ARCH 4505 [0.5]	Seminar in Theory and History
ARCH 4801 [0.5]	Special Topics
ARCS 4302 [1.0]	Conservation Studio 5
ARCU 4103 [0.5]	Cities
ARCU 4300 [0.5]	Theories of Urbanism
ARCU 4700 [0.5]	Urban Utopias
ARCU 4801 [0.5]	Topics in Urbanism
ARTH 1105 [0.0]	Art as Visual Communication
ARTH 2300 [0.5]	Italian Renaissance Art
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]
ARTH 2610 [0.0]	Twentieth-Century Architecture
ARTH 3107 [0.5]	History and Methods of Architectural History
ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art
ARTH 4800 [0.5]	Topics in Architectural History
ARTH 5403 [0.5]	Architecture and Its Institutions
CDNS 2300 [0.5]	Nationalism and Multiculturalism in Canada
CDNS 2400 [0.5]	Heritage Places and Practices in Canada
CDNS 3901 [0.5]	Selected Topics in Canadian Studies
CDNS 4400 [0.5]	Space, Landscape and Identity in Canada
CDNS 4403 [0.5]	Heritage Conservation and Sustainability in Canada
CDNS 4901 [0.5]	Selected Topics in Canadian Studies
CDNS 5301 [0.5]	Canadian Cultural Studies
CIVE 2700 [0.5]	Civil Engineering Materials
CIVE 3203 [0.5]	Introduction to Structural Analysis
CIVE 3204 [0.5]	Introduction to Structural Design
CLCV 2305 [1.0]	Ancient Science and Technology
ENVE 4106 [0.5]	Indoor Environmental Quality
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3105 [0.5]	Climate and Atmospheric Change
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950
HIST 3209 [0.5]	Canadian Urban History
IDES 1001 [0.5]	Industrial Design Analysis
IDES 3306 [0.5]	Special Studies
MATH 1004 [0.5]	Calculus for Engineering or Physics (Design Core Electives)

Design Core Electives

Students in the B.A.S. Design must refer to the Design Core Electives list found in the calendar which

corresponds to their program catalog year. Please visit the calendar archives page, and consult the School of Architecture for guidance when choosing elective courses for the Design program.

Program Requirements

Design

B.A.S. (20.0 credits)

Requirements

1. 4.0 credits in:	4.0
ARCS 1005 [0.5] Drawing	
ARCS 1105 [1.0] Studio 1	
ARCN 2106 [0.5] Introduction to Multimedia	
ARCH 1000 [0.5] Introduction to Architecture	
ARTH 1200 [0.0] History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present	
ARCC 1202 [0.5] History of Structures	
2. 6.0 credits in:	6.0
ARCC 2100 [0.5] Design and the Environment	
ARCC 2202 [0.5] Architectural Technology 1	
ARCC 2203 [0.5] Architectural Technology 3	
ARCC 3202 [0.5] Architectural Technology 4	
ARCC 4500 [0.5] Design Economics	
ARCH 2300 [0.5] Introduction to Modern Architecture	
ARCH 3601 [0.5] Architectural Discourse I	
ARCH 4002 [0.5] Canadian Architecture	
ARCH 4601 [0.5] Architectural Discourse II	
ARCN 2105 [0.5] Introduction to Computer Modeling	
ARCU 3100 [0.5] The Morphology of the City	
CIVE 2005 [0.5] Architectural Technology 2	
3. 8.0 credits in:	8.0
ARCS 2105 [1.5] Studio 2	
ARCS 2106 [1.5] Studio 3	
ARCS 3105 [1.5] Studio 4	
ARCS 3107 [1.0] Studio 5	
ARCS 4105 [1.5] Comprehensive Studio	
ARCS 4107 [1.0] Option Studio	
4. 2.0 credits in free electives	2.0
Total Credits	20.0

Urbanism

B.A.S. Honours (20.0 credits)

A. Credits Included in the Major (16.0 credits)

1. 1.5 credits in:	1.5
ARCH 1000 [0.5] Introduction to Architecture	
ARTH 1200 [0.0] History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present	
2. 12.5 credits in:	12.5
ARCC 2100 [0.5] Design and the Environment	
ARCC 2202 [0.5] Architectural Technology 1	
ARCC 2203 [0.5] Architectural Technology 3	
ARCC 3202 [0.5] Architectural Technology 4	
ARCC 4500 [0.5] Design Economics	
ARCH 2300 [0.5] Introduction to Modern Architecture	

ARCH 4201 [0.5] History of Modern Housing	
ARCS 2303 [1.0] Urbanism Studio 1: Fundamentals of Urbanism	
ARCS 2304 [1.0] Urbanism Studio 2: Urbanism in the Core	
ARCS 3304 [1.0] Urbanism Studio 3: Urbanism on the Periphery	
ARCS 3306 [1.0] Urbanism Studio 5: Global Perspectives	
ARCS 4105 [1.5] Comprehensive Studio	
ARCS 4107 [1.0] Option Studio	
ARCU 3100 [0.5] The Morphology of the City	
ARCU 4103 [0.5] Cities	
ARCU 4300 [0.5] Theories of Urbanism	
ARCU 4700 [0.5] Urban Utopias	
ARCU 4801 [0.5] Topics in Urbanism	
3. 2.0 credits in:	2.0
GEOG 4323 [0.5] Urban and Regional Planning	
GEOG 2023 [0.5] Cities, Inequality and Urban Change	
GEOG 2200 [0.5] Global Connections	
GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution	
B. Credits Not Included in the Major (4.0 credits)	
4. 2.0 credits in:	2.0
ARCN 2106 [0.5] Introduction to Multimedia	
ARCS 1005 [0.5] Drawing	
ARCS 1105 [1.0] Studio 1	
5. 0.5 credit in:	0.5
ARCN 2105 [0.5] Introduction to Computer Modeling	
6. 1.0 credit in Urbanism core electives.	1.0
7. 0.5 credit in free electives.	0.5
Total Credits	20.0

Conservation and Sustainability

B.A.S. Honours (20.0 credits)

A. Credits Included in the Major (16.0 credits)

1. 2.0 credits in:	2.0
ARCH 1000 [0.5] Introduction to Architecture	
ARTH 1200 [0.0] History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present	
ARCC 1202 [0.5] History of Structures	
2. 11.5 credits in:	11.5
ARCH 2300 [0.5] Introduction to Modern Architecture	
ARCH 4200 [0.5] Architectural Conservation Philosophy and Ethics	
ARCC 2202 [0.5] Architectural Technology 1	
ARCC 2203 [0.5] Architectural Technology 3	
ARCC 3202 [0.5] Architectural Technology 4	
ARCC 3502 [0.5] Introduction to Architectural Conservation	
ARCC 4500 [0.5] Design Economics	
ARCH 4002 [0.5] Canadian Architecture	
ARCC 4207 [0.5] Advanced Building Assessment	
ARCS 2302 [1.0] Conservation Studio 1	
ARCS 3301 [1.0] Conservation Studio 2	

ARCS 3302 [1.0]	Conservation Studio 3	
ARCU 3100 [0.5]	The Morphology of the City	
ARCS 4105 [1.5]	Comprehensive Studio	
ARCS 4107 [1.0]	Option Studio	
ARCN 4100 [0.5]	Historic Site Recording and Assessment	
ARCN 4200 [0.5]	Building Pathology and Rehabilitation	
3. 2.5 credits in:		2.5
CDNS 2400 [0.5]	Heritage Places and Practices in Canada	
CIVE 2005 [0.5]	Architectural Technology 2	
CIVE 2200 [0.5]	Mechanics of Solids I	
ENVE 4105 [0.5]	Green Building Design	
ENVE 1001 [0.5]	Architecture and the Environment	
B. Credits Not Included in the Major (4.0 credits)		
4. 2.0 credits in:		2.0
ARCN 2106 [0.5]	Introduction to Multimedia	
ARCS 1005 [0.5]	Drawing	
ARCS 1105 [1.0]	Studio 1	
5. 0.5 credit in:		0.5
ARCN 2105 [0.5]	Introduction to Computer Modeling	
6. 0.5 credit in	Conservation and Sustainability core electives	0.5
7. 1.0 credits in	free electives	1.0
Total Credits		20.0

Regulations (B.Architectural Studies)

In addition to the specific program requirements, students must satisfy the academic regulations of the university, and the faculty regulations for the degree, below. Students should consult the School when planning their program and selecting courses.

Residency Requirement

B.A.S. Hons.

- Conservation and Sustainability
- Urbanism

To be eligible to graduate, students in these programs must present a minimum of 5.0 residency credits in their degree program.

B.A.S.

- Design

To be eligible to graduate, students in this program must present a minimum of half the total number of credits required in their program as residency credits.

For more information, consult section 2.2.2/3.4.1 Minimum Number of Residency Credits (Residency and Advanced Credits) in the Academic Regulations of the University section of this Calendar.

Retention of Work

Keeping a good portfolio is a most important part of architectural education. A portfolio represents a record of the student's progress and design experience over the years, and is an indispensable requirement for any future job application. A portfolio is started in first year and continues to expand until graduation. The School,

therefore, requires that each student produce reductions (normally 8 1/2 x 11 inch reproductions, colour or black and white, slides, and/or digital format CD) of his or her work at the end of each term. One copy of the work should be put in the student's portfolio and the other turned in to the instructor for retention in the School's archives. (This facilitates retrospective exhibitions of work, accreditation, publications and any future references for pedagogic purposes.) Original work is the property of the students, but the School retains the right to keep work of merit for up to two years after the date of submission. The School will make every effort to preserve the work in good condition, and will give authorship credit and take care of its proper use.

Academic Continuation Evaluation for Bachelor of Architectural Studies

B.A.S. Conservation and Sustainability, B.A.S. Urbanism

Students in these programs are Honours students, and follow the continuation requirements governing Honours programs as described in Section 3.2.6 of the *Academic Regulations of the University*, with the additions and amendments listed below.

Students with 15.5 or more program credits completed, but who have a Major CGPA less than 6.00, will be required to leave the B.A.S. Conservation and Sustainability or B.A.S. Urbanism programs with the decision *Required to Withdraw for Two Terms* (WT).

B.A.S. Design

B.A.S. Design students follow the continuation requirements governing the B.A.S. Design program as described in Section 3.2.6 of the *Academic Regulations of the University*, with the additions and amendments listed below.

All B.A.S. Programs

The following additions and amendments apply to all B.A.S. programs:

1. Whenever the student is assessed, the Core minimum is applied, as described in point 2 below.
2. The status *Eligible to Continue* (EC) requires a minimum grade of C- in each B.A.S. Core course.
3. The B.A.S. Core Courses consist of the following:

B.A.S. Design

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2105 [1.5]	Studio 2
ARCS 2106 [1.5]	Studio 3
ARCS 3105 [1.5]	Studio 4
ARCS 3107 [1.0]	Studio 5
ARCS 4105 [1.5]	Comprehensive Studio
ARCS 4107 [1.0]	Option Studio

B.A.S. Urbanism

ARCS 1005 [0.5]	Drawing
ARCS 1105 [1.0]	Studio 1
ARCS 2303 [1.0]	Urbanism Studio 1: Fundamentals of Urbanism

ARCS 2304 [1.0] Urbanism Studio 2: Urbanism in the Core

ARCS 3304 [1.0] Urbanism Studio 3: Urbanism on the Periphery

ARCS 3306 [1.0] Urbanism Studio 5: Global Perspectives

ARCS 4105 [1.5] Comprehensive Studio

B.A.S. Conservation and Sustainability

ARCS 1005 [0.5] Drawing

ARCS 1105 [1.0] Studio 1

ARCS 2302 [1.0] Conservation Studio 1

ARCS 3301 [1.0] Conservation Studio 2

ARCS 3302 [1.0] Conservation Studio 3

ARCS 4301 [1.5] Conservation Studio 4

ARCC 3502 [0.5] Introduction to Architectural Conservation

4. Students whose Academic Continuation Evaluation results in the status *Required to Withdraw for Two Terms* (WT) must leave the B.A.S. degree. Application for readmission to any B.A.S. program may be made after this time.

See the *Academic Regulations of the University* section of the Calendar for additional information.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Architectural Studies: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the B.A.S. program;
2. Obtained and maintained an overall CGPA of 9.00 or higher.

Students in the Bachelor of Architectural Studies must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Report Course: ARCN 3999 [0.0]

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by

program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Architectural Studies (B.A.S.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English, Physics, and Advanced Functions. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement. Calculus and Vectors is strongly recommended.

Note: a portfolio is required. Detailed information about the portfolio requirements can be found on the Undergraduate Admissions website at admissions.carleton.ca.

Advanced Standing

Applications for admission to the second or subsequent years will be assessed on their merits. Applicants must normally be *Eligible to Continue* in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applicants will also be required to complete a portfolio which will assist in the evaluation of their suitability for the program. Detailed information about the portfolio requirements can be found at admissions.carleton.ca.

Students will not receive credit for courses graded below C-.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the B.A.S. program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Architecture - Studio (ARCS) Courses

ARCS 1005 [0.5 credit]

Drawing

Free-hand drawing as a way of observing and understanding the world. Various media and techniques introduced through a wide range of studio and outdoor exercises. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A.S. program.

Six hours a week.

ARCS 1105 [1.0 credit]

Studio 1

Students from all BAS majors are introduced to the fundamentals of designing for the built environment using the conventions of varied modes of analog representation and physical making. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A.S. program.

Studio eight hours per week.

ARCS 2105 [1.5 credit]

Studio 2

Supported by the core curriculum, focuses on small-scale building in a local context. Using analog methods, projects introduce the integration of basic structure and building systems while furthering fundamental concepts such as space, inhabitation, and materiality. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 1005 and ARCS 1105.

Twelve hours studio, plus one hour lecture per week.

ARCS 2106 [1.5 credit]

Studio 3

With a focus on small to medium scale building projects, projects consider analog and digital methods to advance consideration of site, program, and the materials as the means for shaping the built environment. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 1005 and ARCS 1105.

Twelve hours studio, plus one hour lecture per week.

ARCS 2302 [1.0 credit]**Conservation Studio 1**

Conservation methodologies will be tested and studied through design exercises and historical research on existing architectures, cities and landscapes. The emphasis on the understanding and the relation with the setting will be essential.

Includes: Experiential Learning Activity

Prerequisite(s): ARCC 3502, ARCS 1005, ARCS 1105 and second-year standing in B.A.S. major Conservation and Sustainability or permission of the School.

Eight hours studio per week.

ARCS 2303 [1.0 credit]**Urbanism Studio 1: Fundamentals of Urbanism**

Through readings, discussions and projects, students will examine a number of the forces that produce the built environment and explore a variety of approaches to documenting, representing, analyzing, organizing and controlling the growth, shape, density, and mix of uses associated with cities.

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 2303 (no longer offered), ARCU 3501 (no longer offered).

Prerequisite(s): ARCS 1005 and ARCS 1105, or permission of instructor.

Eight hours studio, plus one hour lecture per week.

ARCS 2304 [1.0 credit]**Urbanism Studio 2: Urbanism in the Core**

Intensification, revitalization, gentrification, brownfield redevelopment, sustainability, development standards, form-based codes, and the larger impact of migration on urban density. Through design, students explore the ramifications of practices, policies, pressures, processes and cultural preferences on the evolving form and function of the urban core.

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 3303 (no longer offered).

Prerequisite(s): ARCS 1105, and third-year standing in B.A.S. Urbanism major or permission of the School.

Eight hours studio, plus one hour lecture per week.

ARCS 3105 [1.5 credit]**Studio 4**

Supported by the core curriculum, focuses on a medium-scale building within a regional context. May include a small design-build. Projects further analog and digital methods. May introduce concepts like adaptive re-use while furthering the understanding of structure and building systems in a complex building. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 2105 and ARCS 2106.

Twelve hours studio, plus one hour lecture per week.

ARCS 3107 [1.0 credit]**Studio 5**

The Directed Studies Abroad (DSA) studio considers large-scale, mixed-use buildings in an international context. Design projects advance analog and digital methods to explore broader cultural and social conditions within a complex site often in conjunction with a site visit abroad. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 3106 (no longer offered).

Prerequisite(s): ARCS 2105 and ARCS 2106.

Eight hours studio, plus one hour lecture per week.

ARCS 3301 [1.0 credit]**Conservation Studio 2**

Historical building projects exploring architecture as a form of cultural expression. Consideration of site, program and materials. Introduction of conservation, sustainability and adaptive re-use principles, development standards, architectural codes, using case studies in Ottawa and elsewhere. Physical, digital drawings and models to explore designs. (Core).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3301 (no longer offered).

Prerequisite(s): ARCC 3502, ARCS 2302 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Studio eight hours per week.

ARCS 3302 [1.0 credit]**Conservation Studio 3**

The role of architecture in culture, stressing site and program with respect to their historic, social and ecological implications. Synthesis of issues, methods and techniques of the conservation and sustainability curriculum. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3302 (no longer offered).

Prerequisite(s): ARCS 3301 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Studio eight hours per week.

ARCS 3304 [1.0 credit]**Urbanism Studio 3: Urbanism on the Periphery**

Urbanization, sprawl, growth models, land consumption, containment strategies (smart growth, greenbelts, growth boundaries), edge cities, the Just City, Ecological Urbanism, and informal suburbanization in developed and developing countries. Through design, students explore the impact of practices, pressures, processes and cultural preferences on the expanding city.

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 3304 (no longer offered).

Prerequisite(s): ARCS 2303 and ARCS 2304 and third-year standing in B.A.S. Urbanism major or permission of the School.

Eight hours studio, plus one hour lecture per week.

ARCS 3306 [1.0 credit]**Urbanism Studio 5: Global Perspectives**

Urbanization as a global phenomenon. Study of various forms of urbanization and de-urbanization in relation to economic, political and cultural forces. Through design, students explore the (trans)formation of settlements and communities outside of the North American context.

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 4304 (no longer offered).

Prerequisite(s): ARCS 2303 and ARCS 2304 and third-year standing in B.A.S. Urbanism major or permission of the School.

Eight hours studio, plus one hour lecture per week.

ARCS 4105 [1.5 credit]**Comprehensive Studio**

Focussing on multi-unit housing, students from BAS majors collaborate to develop strategies for redevelopment of large urban sites. Engages urban design, site planning, programming, adaptive reuse, and community consultation. Students produce detailed designs for buildings, emphasizing building systems and envelope design. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 3105 and ARCS 3107, or ARCS 3303 and ARCS 3304.

Twelve hours studio, plus one hour lecture per week.

ARCS 4107 [1.0 credit]**Option Studio**

Offers a range of topics for exploration. Students use analog and digital methods and techniques to culminate the undergraduate studio sequence while offering focused research-led investigation into key social, political, spatial issues. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 4106 (no longer offered).

Prerequisite(s): ARCS 3105 and ARCS 3107.

Eight hours studio, plus one hour lecture per week.

ARCS 4301 [1.5 credit]**Conservation Studio 4**

Issues of program and site as the culturally defining aspects of sustainable architectural practice within complex urban and social situations, using difficult sites, historically significant buildings and/or locations and hybrid programs. projects brought to a high degree of formal and graphic resolution. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 4301 (no longer offered).

Prerequisite(s): ARCS 3302 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Twelve hours studio and one hour of lecture per week.

ARCS 4302 [1.0 credit]**Conservation Studio 5**

Conservation decision-making process and contemporary conservation concepts in the development of a design for the adaptive reuse, in Ottawa and elsewhere.

Consideration of sustainability aspects, site, program, and materials.

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 4302 (no longer offered).

Prerequisite(s): ARCS 4301 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Studio eight hours per week.

ARCS 4303 [1.5 credit]**Urbanism Studio 4: Housing**

Housing as it affects urban form. The design of multi-unit housing in a variety of forms and for a range of demographic groups. After thorough research of applicable codes and bylaws, students engage the design of housing at the site, building and detail level.

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 4303 (no longer offered).

Prerequisite(s): ARCS 3303 and ARCS 3304 and fourth-year standing in B.A.S. Urbanism major or permission of the School.

Studio twelve hours per week and one hour lecture.

Architecture - Technical (ARCC) Courses**ARCC 1202 [0.5 credit]****History of Structures**

A survey of the history, theory, and science of structures pertaining to buildings and civic works. Structural systems, construction techniques, materials and details, and the cultural factors involved in the synthesis of traditional structural design.

Includes: Experiential Learning Activity

Prerequisite(s): registration in B.A.S.

Lectures three hours a week, laboratory is block scheduled.

ARCC 2001 [0.5 credit]**Structures in Architecture**

Survey of structural planning, including a historical survey of structural systems, details and the study of the factors involved in the synthesis of a suitable structural scheme.

The course is intended as a survey of the science and the structural properties of materials. (Elective Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 1103.

Lectures three hours a week, laboratory is block scheduled.

ARCC 2100 [0.5 credit]**Design and the Environment**

Examines varied methods and techniques to understand the people, places, and potentials of landscapes with a focus on equity and an ethics of care for social and physical environments.

Prerequisite(s): Second-year standing or permission of the School.

Lecture three hours per week

ARCC 2202 [0.5 credit]**Architectural Technology 1**

General introduction to materials and methods of construction with focus on wood and timber frame construction. Site conditions, foundations, structure and envelope design in terms of their response to local climate: sun (light and heat) wind, moisture. (Core course).

Prerequisite(s): permission of the School.

Lectures three hours a week.

ARCC 2203 [0.5 credit]**Architectural Technology 3**

Wood frame, post and beam, steel and concrete systems and construction techniques. Structural systems and building envelope principles and practise are explored in conjunction with mechanical and electrical systems in smaller buildings. Emphasis on precedent, tradition and methodology of architectural detailing for construction.

Includes: Experiential Learning Activity

Prerequisite(s): ARCC 2202 and third-year standing for B.A.S. students and third-year standing for students in B.Eng. Architectural Conservation and Sustainability.

Lectures three hours a week.

ARCC 3004 [0.5 credit]**Workshop: Energy and Form**

Relationship between environmental factors, energy and architectural form. Ways in which buildings and building elements can be planned and designed to take advantage of natural cycles in order to minimize the need for supportive energy inputs. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCC 3202 [0.5 credit]**Architectural Technology 4**

Medium scale steel, concrete, and wood frame buildings as case studies to explore approaches to building science principles, building envelope design, advanced construction methods and materials, acoustics and sound control, and fire protection. Focus on sustainable design strategies and environment impact. (Core course).

Prerequisite(s): ARCC 2203 and third-year standing for B.A.S. students or ARCC 2203 and third-year standing for students in B.Eng. Architectural Conservation.

Lectures three hours a week.

ARCC 3305 [0.5 credit]**Materials Application**

Application of building materials, including the forming of building parts and the design of joints for performance and assembly. Practical constructions using new technology are emphasized. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCC 3502 [0.5 credit]**Introduction to Architectural Conservation**

Introduces conservation concepts to understand the values associated with existing buildings and landscapes. Through the analysis of sites and case studies, students will discuss the potentials and limitations of architectural conservation, as well as, testing its possibilities for sustainable retrofitting practices.

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3501 (no longer offered).

Lectures three hours per week

ARCC 3902 [0.5 credit]**Architectural Technology**

A specific aspect of architecture in the area of architectural technology. Offerings vary from year to year. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCC 4100 [0.5 credit]**Lighting for Architecture**

A study of daylighting and/or lighting design techniques, with a focus on project-based learning. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): ARCC 2203 or permission of the School.

Lecture, seminar, workshop or field work six hours a week.

ARCC 4102 [0.5 credit]**Acoustics in Architecture**

Sound in enclosures, including interior design of auditoria and special applications. Sound reproduction and reinforcement systems. Acoustic privacy and protection, sound control in buildings, materials for noise control, community noise, industrial noise. Acoustic measurements and instrumentation. (Elective Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3002.

Lectures two hours, laboratory two hours a week.

ARCC 4103 [0.5 credit]**Energy and Form**

Energy as a criterion in decision-making for architectural design. Conventional energy resources and state-of-the-art alternative energy resource systems with respect to building shape, size, materials, openings, orientation, siting, and use. (Elective Course).

Precludes additional credit for ARCC 3003.

Lectures three hours a week.

ARCC 4200 [0.5 credit]**Structural Morphology**

Interdisciplinary study of structural and developmental morphology focusing on dynamic generative design processes, integrative systems, spatial modulations and fundamental generative principles of spatial form and structure as it relates to architecture. (Workshop).

Includes: Experiential Learning Activity

Lectures, seminar, workshop or field work six hours a week.

ARCC 4202 [0.5 credit]**Wood Engineering**

Introduction to structural design in timber. Properties, anatomy of wood, wood products, factors affecting strength and behaviour, strength evaluation and testing. Design of columns, beams and beam-columns. Design of trusses, frames, glulam structures, plywood components, formwork, foundations, connections, connectors.

Inspection, maintenance and repair. (Elective course).

Prerequisite(s): CIVE 2200, CIVE 2700.

Lectures three hours a week, problem analysis three hours alternate weeks.

ARCC 4207 [0.5 credit]**Advanced Building Assessment**

In-depth study of the conventions, methods, and tools used in the assessment of buildings and their sties including traditional field survey, photogrammetry, laser scanning technologies, and hybrid representations.

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 4900 (no longer offered).

Prerequisite(s): enrolment in the BAS Conservation and Sustainability program and fourth-year standing.

Laboratories, lectures, field trips, six hours a week.

ARCC 4300 [0.5 credit]**Building Materials**

Contemporary and traditional construction techniques and materiality are discussed within the framework of current practices, with emphasis on the analysis of material properties, structure and sustained performance, as well as their contribution to the adaptive reuse of existing and/or historical building. (Elective Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3300.

Laboratories, lectures, field trips four hours a week.

ARCC 4400 [0.5 credit]**Design for Construction**

Design in relation to materials and building construction including the effects of building codes, zoning bylaws, approvals, processes and legislation, the organization of the building industry, and cost estimating control. (Elective Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCC 3300 or permission of the School.

Lectures, seminars, field work three hours a week.

ARCC 4500 [0.5 credit]**Design Economics**

Principles of building economics. Determinants and prediction of building costs. Uncertainty and investment economics. Creative cost control for buildings during schematic design, design development, construction document preparation and construction. Economic evaluation during all phases of design process; emphasis on sustainable strategies.

Precludes additional credit for ARCC 3500.

Prerequisite(s): fourth-year standing in the B.A.S. program or permission of the School.

Three hours a week.

ARCC 4801 [0.5 credit]**Architectural Technology**

A specific aspect of architecture in the area of architectural technology. Topics vary from year to year. (Elective Course).

Prerequisite(s): permission of the School.

ARCC 4808 [0.5 credit]**Independent Study**

(Elective Course).

ARCC 4909 [1.0 credit]**Honours Project**

Students propose a topic of study in Conservation & Sustainability for approval and produce a substantial research project, supervised by BAS faculty. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in BAS (Conservation and Sustainability).

Architecture - Techniques (ARCN) Courses

ARCN 1005 [0.5 credit]

Introduction to Drawing: Seeing Through the Hand

Fundamental concepts of line and line weight, light and shadow, perspective, contrast and composition. Exercises will include some mixed media and will introduce students to drawing as a way of translating ideas into images.

Includes: Experiential Learning Activity

One hour lecture and two hours drawing/discussion.

ARCN 2105 [0.5 credit]

Introduction to Computer Modeling

Computer modeling as a medium of architectural analysis, documentation, and presentation. Principles and techniques of 2D drawing and 3D modeling. Extensive practical work using appropriate applications. (Core Course).

Includes: Experiential Learning Activity

Three hours lecture and three hours lab per week

ARCN 2106 [0.5 credit]

Introduction to Multimedia

Analogue and digital systems and graphic processes used in the making of images. Fundamentals of still photography and videography combined with current computer technologies in the application of visual communication techniques.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 2106.

Lectures three hours a week, laboratory three hours a week.

ARCN 3003 [0.5 credit]

Theatre Production

Design and fabrication of theatre productions, one of which is staged on campus. Visiting directors, designers, technical consultants and others. Visits to theatres and production facilities. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3206 [0.5 credit]

Computer Applications

Application of existing software and programming techniques to various architectural problems. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3302 [0.5 credit]

The Anatomy of Architecture

The architectural anatomy of selected contemporary buildings. Use of graphic techniques of analysis to develop an understanding of their basic compositional principles and language. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3303 [0.5 credit]

Architecture as Painting

Analysis of architecture for its elemental, formal and narrative properties. These relationships through the medium of painting. Architecture as analogy to painting. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3400 [0.5 credit]

Visual Design

Development of the capacity to visualize and communicate in several graphic media. Development of sensitivity to form, structure, space, texture and colour. May involve historical investigation. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3401 [0.5 credit]

Photography

Traditional and alternative techniques for image making and manipulation. Basic image formation techniques, advanced darkroom manipulations, past-darkroom imaging, and digital imaging within a theoretical overview of current photographic processes and techniques. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3999 [0.0 credit]

Co-operative Work Term

Includes: Experiential Learning Activity

ARCN 4100 [0.5 credit]

Historic Site Recording and Assessment

Methods of heritage building documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.

Includes: Experiential Learning Activity

Also listed as CIVE 3207.

Precludes additional credit for ARCN 3100 (no longer offered).

Prerequisite(s): second-year standing in B.A.S.

Conservation and Sustainability.

Lectures three hours a week, lab or field work two hours a week.

ARCN 4102 [0.5 credit]**Problems in Computing**

Various types of non-numeric data, their representation within primary and secondary storage, and the manipulation of various representations. Comparative evaluation of languages for non-numeric problems. (Elective Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCN 3102.

Prerequisite(s): permission of the School.

Lectures two hours a week, laboratory two hours a week.

ARCN 4103 [0.5 credit]**Digital Fabrication and Theory**

The changing relationship of architectural design and digital technology with a focus on 1:1 constructions using emerging computational software and fabrication techniques. (Workshop/Elective Course).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lectures two hours a week, laboratory two hours a week.

ARCN 4200 [0.5 credit]**Building Pathology and Rehabilitation**

Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures.

Includes: Experiential Learning Activity

Also listed as CIVE 4601.

Prerequisite(s): ARCN 4100 and third-year standing in B.A.S. Conservation and Sustainability.

Lectures three hours a week, lab/field work two hours a week.

ARCN 4808 [0.5 credit]**Independent Study**

(Elective Course).

Includes: Experiential Learning Activity

Architecture - Theory/History (ARCH) Courses**ARCH 1000 [0.5 credit]****Introduction to Architecture**

Architecture in the matrix of human conditions: linkages among architecture, fine arts, humanities, social sciences, physical sciences, mathematics and philosophy.

Architectural ideas will be introduced through a discussion of cities, buildings and landscapes. (Core Course).

Lectures three hours a week.

ARCH 1005 [0.5 credit]**Contemporary Society**

The relationship of architecture, architectural thought and the architectural profession to the societies in which they exist (and which they must serve). Topics are selected to emphasize key issues. (Elective Course).

Lectures and seminars, three hours a week.

ARCH 2006 [0.5 credit]**Theory and History of Design**

The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes. (Elective course).

Also listed as IDES 1000.

Lectures three hours a week.

ARCH 2101 [0.5 credit]**Industrial Design Analysis**

Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment. (Elective course).

Includes: Experiential Learning Activity

Also listed as IDES 1001.

Prerequisite(s): ARCH 2006 or IDES 1000.

Lectures three hours a week.

ARCH 2300 [0.5 credit]**Introduction to Modern Architecture**

Architectural and urban ideals of modernism with emphasis upon the development of the avant-garde in the early twentieth century. The phenomenon of modern architecture within the broader framework of the development of western thought. (Core Course).

Precludes additional credit for ARCH 3009.

Prerequisite(s): B.A.S. students require ARTH 1100 or ARTH 1200 and ARTH 1101 or ARTH 1201.

Lectures three hours a week.

ARCH 3208 [0.5 credit]**Urban Space Architecture**

Design explorations that are directed towards the search for aesthetic form and meaning in urban space, with particular application to the Canadian context. Project-oriented. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 3601 [0.5 credit]**Architectural Discourse I**

Examines ideas relevant to contemporary architectural discourses and practices focused on the development of critical thinking and communication skills situated in emerging inquiries within a longer lineage of existing architectural theory. (Core Course).

Prerequisite(s): Third-year standing or permission of the School.

Lecture 3 hours per week

ARCH 3902 [0.5 credit]**Theory of Architecture**

Workshop focuses on one specific aspect of architecture in the area of theory and history. Workshop offerings change from year to year. (Workshop).

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 4002 [0.5 credit]**Canadian Architecture**

Canadian architecture from the seventeenth century to the present. Building styles, methods, construction techniques, and materials in the context of social and economic conditions of both indigenous and settlement approaches to the built environment.

Includes: Experiential Learning Activity

Also listed as ARTH 3002.

Precludes additional credit for ARCH 3002.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures, seminars three hours a week.

ARCH 4004 [0.5 credit]**Architectural Theory**

An exploration of architectural intentions in the early period of Western history, with special emphasis on Renaissance treatises and ideas. Architectural intentions in relation to shifting world-views as a basis of historical interpretation. (Theory/History Elective).

Precludes additional credit for ARCH 3007.

Lectures three hours a week.

ARCH 4006 [0.5 credit]**Origins of Modernism**

Exploration of architectural theories with special emphasis on the European context from the seventeenth century to the late nineteenth century. (Theory/History Elective).

Precludes additional credit for ARCH 3008.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4008 [0.5 credit]**Foundations of Modernism**

Major critical perspectives as applied to architecture as a fine art. The debate between classicism and romanticism with consideration of its cultural roots. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4009 [0.5 credit]**Theory of the Avant-Garde**

Exploration of architectural theories with special emphasis on the development of the avant-garde in the early twentieth century, looking at the avant-garde within the larger framework of modernism. (Theory/History Elective).

Precludes additional credit for ARCH 3009.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4105 [0.5 credit]**Theories of Landscape Design**

Introduction to landscape architecture as the organization of outdoor space. Historical, cultural, economic and political factors as a basis for interpreting spatial organization in urban and rural areas of human settlement. Emphasis on the period from the fifteenth to the nineteenth century. (Theory/History Elective).

Prerequisite(s): second-year standing or above.

Lectures three hours a week.

ARCH 4200 [0.5 credit]**Architectural Conservation Philosophy and Ethics**

Analysis of philosophical theories and related approaches to the material transformation of buildings. Micro-histories in architectural conservation theory and practice; overview of historical and contemporary concepts in architectural conservation. Preservation, restoration, rehabilitation, reconstruction, adaptive re-use, conservation anamnesis, diagnosis.

Precludes additional credit for ARCH 3100 (no longer offered).

Prerequisite(s): ARCC 3502 and third-year standing in B.A.S.; OR third-year status in B.Eng. (Architectural Conservation and Sustainability).

Lectures three hours a week.

ARCH 4201 [0.5 credit]**History of Modern Housing**

Study of housing as a function of social organization, demographics, market demand and public policy. Topics include the evolution of housing form, the role of the state, and the participation of architects in the housing marketplace in the 19th and 20th century. (Theory/History Elective).

Prerequisite(s): third-year standing in the B.A.S. program or permission of the School.

Lectures three hours a week.

ARCH 4204 [0.5 credit]**The Design Professions**

Architecture and design professions in relation to traditional professions and to occupations in art and design. Professions in the development of culture and society; education, career and work; knowledge in the design professions; and the nature of design practice. (Elective Course).

Also listed as SOCI 4204.

Prerequisite(s): third-year standing in the B.A.S. program; fourth-year standing in Sociology; fourth-year standing in the B.A. Honours Architecture/Art History program; or permission of the School.

Seminar three hours a week.

ARCH 4205 [0.5 credit]**User-Building Synopsis**

Projects to develop skills in the analysis of building performance. Examination of occupancy analysis, safety and risk assessment, post-occupancy evaluation, and social impact assessment. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 4206 [0.5 credit]**Recycling Architecture in Canada and Abroad**

Concepts of mediating old and new architecture at the scale of the city through to the detail of the construction joint. Issues in sustainability and cultural identity illuminated by recycled architecture and adaptive reuse are explored through readings, drawings and case studies. (Theory/History Elective).

Prerequisite(s): third-year standing in the B.A.S. program or by permission of the instructor or fourth-year standing in the B.Eng. Architectural Conservation and Sustainability program.

Lectures three hours a week.

ARCH 4300 [0.5 credit]**Neo-Classical Architecture**

18 th - and 19 th- century architecture and urban form in Western Europe. Emphasis on the cultural and philosophical framework of rising modernity to illuminate architectural production and theory as well as the development of urban form. (Theory/History Elective). Precludes additional credit for ARCH 1201 and ARCH 2200.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4301 [0.5 credit]**Post-War Architecture**

Theoretical, ideological and artistic debates that have influenced the development of world architecture since 1950. (Theory/History Elective).

Also listed as ARTH 4604.

Prerequisite(s): ARCH 2300 or ARTH 3609 or permission of the instructor.

Lecture or seminar three hours per week.

ARCH 4302 [0.5 credit]**Pre-Columbian Architecture**

Monumental temples of the ancient Mesoamericans are compared with other world traditions at similar levels of cultural development. Selected examples considered in terms of morphology, technology, iconography, social/ political context, world view and general architectural theory. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4303 [0.5 credit]**Greek Architecture**

Architecture of Greek antiquity and its relationship to its philosophical, artistic, and mythical contexts. The development of the idea of the city; the presence of architecture within its symbolic landscape. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4304 [0.5 credit]**The Architecture of Rome**

Rome in its classical to late-antique periods. Its founding mythologies and landscape. In-depth analysis of Rome, with special attention to its public buildings. Early Christian architecture within the Roman context. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4305 [0.5 credit]**Medieval Architecture**

Gothic architecture and its relation to its philosophic and artistic predecessors. Special attention to the coexistence of the monastic tradition, late Romanesque building, and new experiments in gothic during this period, marked by intellectual and political ferment. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4306 [0.5 credit]**Renaissance Theory**

The rise of architectural theory within the context of the Italian Renaissance. Canonic texts explored and compared in the context of the architectural developments of the period. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4307 [0.5 credit]**Muslim Architecture**

Historical and theoretical discussions about the architecture of Muslim cultures. Selected sites and monuments from eighth to eighteenth century, covering the vast geography from North Africa to Southeast Asia. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4308 [0.5 credit]**Asian Architecture**

Anthropological history of the architecture of the Near and Far East. The architecture and urban form of Ancient Egypt, Anatolia, Sumer and Persia; ancient China and India. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4309 [0.5 credit]**Mesoamerican Architecture**

Selected works of Mesoamerican architecture in terms of iconography, morphology, technology, function, historical development, and concept. Mesoamerican architectural features compared with other world traditions. Emphasis on design. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4400 [0.5 credit]**Theory**

A survey of the architectural and urban history of a specific culture. These discussions address the present reality of a country, region or city being visited by the fourth year of the program. (Elective Course).

Prerequisite(s): clear standing to fourth year and permission of the School.

Lectures three hours a week.

ARCH 4502 [0.5 credit]**Research and Criticism**

Preparation for the independent research and design work. Work related to the nature of research and criticism in architecture, with emphasis on current issues. (Theory/History Elective).

Includes: Experiential Learning Activity

Lectures and seminars three hours a week.

ARCH 4505 [0.5 credit]**Seminar in Theory and History**

History and theory of architecture. Topics will vary from year to year. Limited enrolment. (Elective Course).

Prerequisite(s): fourth-year standing in the B.A.S. or B.A. (Honours) Architecture/Art History programs, or permission of the School.

Lectures three hours a week.

ARCH 4601 [0.5 credit]**Architectural Discourse II**

Examines ideas and methods relevant to contemporary architectural discourse with a focus on cultural diversity and global perspectives. Architectural Discourse II builds on learned skills from previous work and acts as a preparatory course for research skills necessary at the graduate level. (Core Course).

Prerequisite(s): ARCH 3601 and fourth-year standing or permission of the School.

Lecture three hours per week.

ARCH 4801 [0.5 credit]**Special Topics**

An aspect of architecture in the area of theory and history. Topics vary from year to year. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4808 [0.5 credit]**Independent Study**

(Elective Course).

ARCH 4900 [0.5 credit]**Directed Reading**

Supervised readings and research projects. Guidelines must be obtained from BAS Academic Advisors prior to registration. (Core course).

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism).

ARCH 4909 [1.0 credit]**Honours Project**

Students propose a topic of study in Philosophy and Criticism for approval and produce a substantial research project, supervised by BAS faculty. (Core course).

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism).

Architecture - Urban (ARCU) Courses**ARCU 2100 [0.5 credit]****Special Topics in Urbanism**

Seminar in selected topics related to Urbanism at an introductory level.

Lecture and discussion three hours per week.

ARCU 3100 [0.5 credit]**The Morphology of the City**

Primary structural, spatial and formal organization and elements that characterize the morphology of cities; historical and contemporary significance for architecture and urban design. (Core).

Prerequisite(s): First-year standing in the B.A.S. Urbanism major, second or third-year standing in other B.A.S. majors, or permission of the School.

Lecture two hours a week and tutorial one hour a week.

ARCU 3203 [0.5 credit]**Landscape Architecture**

Practical significance of landscape elements as they relate to built-form by integrating structure and site. (Workshop).

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3405 [0.5 credit]**Urban Design**

Project-based workshop investigating current design attitudes and solutions affecting the physical morphology of cities. Formally sophisticated urban design projects. Various procedures and basic urban design ideas. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3409 [0.5 credit]**City Organization and Planning Processes**

Interdisciplinary investigation, analysis and synthesis of the institutions, processes, environments and demography of Canadian cities. Guest lecturers. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3902 [0.5 credit]**Urban Studies**

A specific aspect of architecture in the area of urban studies. Topics vary from year to year. (Workshop).

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 4103.

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 4103 [0.5 credit]**Cities**

Course addresses cities such as Istanbul, Mexico City, Venice, Paris, Ottawa, Mumbai, and New Orleans.

Topics presented by the instructor and guests include environmental resilience and climate change; social justice and informal settlement; smart cities and data privacy; and urban design, memory, and imagination.

Precludes additional credit for ARCU 3902.

Prerequisite(s): Second-year standing or permission of the Instructor.

Lecture two hours per week and tutorial one hour per week.

ARCU 4300 [0.5 credit]**Theories of Urbanism**

Contemporary urban theory and critical scholarship that engages evolving social, political, economic and environmental perspectives, addresses multiple scales, geographic contexts, and disciplinary boundaries, and investigates the expanding array of models, tools and techniques that have contributed to various theories of urbanism.

Prerequisite(s): ARCU 3100.

ARCU 4400 [0.5 credit]**City Organization and Planning**

Structure, form and functioning of cities. Infra-structure, facilities and networks, ecosystems, demographic and social organization, government, quality of life, goals and perceptions, urban management, development, regulation and codes, design, planning and policy-making. (Elective Course).

Precludes additional credit for ARCU 3400.

Three hours a week.

ARCU 4500 [0.5 credit]**Human Shelter**

Background factors pertaining to housing in both industrial and developing countries; traditional and contemporary housing approaches; social housing; and people's right to adequate housing. Guest lecturers. (Elective Course).

Precludes additional credit for ARCU 3500.

Three hours a week.

ARCU 4600 [0.5 credit]**Post-WWII Urbanism**

Urban renewal in the post-war period in response to housing shortages, suburbanization, transportation infrastructure and other factors. Gentrification and the emerging form of the post-industrial city, including new urbanism and sustainable communities. Case studies from Canada, Europe and the U.S. (Theory/History Elective).

Prerequisite(s): ARCU 3100 and third or fourth-year standing in the B.A.S. Urbanism program or permission of the School.

Lectures three hours a week.

ARCU 4700 [0.5 credit]**Urban Utopias**

Urban utopias throughout history, with emphasis on the 20th century. Garden Cities, anti-urbanism and radical decentralization, the city in the region, Italian Rationalist cities, Le Corbusier and CIAM, post-WWII New Towns (England, Scandinavia and the US), Sustainable Urbanism.

Prerequisite(s): third or fourth-year standing in B.A.S. Urbanism program or permission of the School.

Lectures three hours a week.

ARCU 4801 [0.5 credit]**Topics in Urbanism**

Advanced seminar in selected topics related to urbanism.

Topics may include histories and theories related to urban systems, design, and planning. (Core course).

Prerequisite(s): third-year standing in B.A.S. (Urbanism) or permission of the Instructor.

Seminar three hours per week.

ARCU 4808 [0.5 credit]**Independent Study**

(Elective Course).

Includes: Experiential Learning Activity

ARCU 4901 [0.5 credit]**Topics in Applied Urbanism**

Advanced investigation into issues related to urbanism and urban form. Topics will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.A.S. (Urbanism) or permission of Instructor.

Lecture three hours per week.

Art History

This section presents the requirements for programs in:

- Art History B.A. Honours
- Art History B.A. Combined Honours
- Art History B.A.
- Minor in Art History
- Post-Baccalaureate Diploma in Art History
- History and Theory of Architecture B.A. Honours
- History and Theory of Architecture B.A. Combined Honours
- History and Theory of Architecture B.A.

- Minor in History and Theory of Architecture
- Post-Baccalaureate Diploma in History and Theory of Architecture

Program Requirements

Art History

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 3.0 credits in:	3.0
ARTH 1100 [0.0] Art and Society: Prehistory to the Renaissance	
ARTH 1101 [0.0] Art and Society: Renaissance to the Present	
ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present	
ARTH 2009 [0.5] Art Live: Art History Workshop	
ARTH 3100 [0.5] History and Methods of Art and Architectural History	
ARTH 3108 [0.0] History and Methods of Art History	
2. 1.0 credit from:	1.0
ARTH 2102 [0.5] Greek Art and Archaeology	
ARTH 2105 [0.5] Roman Art and Archaeology	
ARTH 2107 [0.5] Islamic Architecture and Art	
ARTH 2202 [0.5] Medieval Architecture and Art	
ARTH 2300 [0.5] Italian Renaissance Art	
3. 1.0 credit from:	1.0
ARTH 2502 [0.5] Art of the 19th Century	
ARTH 2600 [0.5] Modern European Art 1900-1945	
ARTH 2601 [0.0] History and Theory of Photography	
4. 0.5 credit from:	0.5
ARTH 2002 [0.5] Historical Art in Canada	
ARTH 2003 [0.5] Canadian Twentieth-Century and Contemporary Art	
5. 0.5 credit from:	0.5
ARTH 2005 [0.5] Arts of the First Peoples: The Woodlands, the Plains and the Subarctic	
ARTH 2006 [0.5] Arts of the First Peoples: The Southwest, the West Coast and the Arctic	
ARTH 2007 [0.5] Asian Art	
ARTH 2008 [0.5] Inuit Art	
ARTH 2106 [0.5] Chinese Art and Visual Culture	
6. 1.0 credit in ARTH at the 3000 level	1.0
7. 2.0 credits in ARTH at the 4000 level	2.0
8. 1.0 credit in ARTH at the 2000 level or higher	1.0
B. Credits Not Included in the Major CGPA (10.0 credits)	
9. 8.0 credits in electives not in ARTH	8.0
10. 2.0 credits in free electives	2.0
Total Credits	20.0

Note:

- Art History majors may take up to 1.0 credit in studio art courses from an accredited university as an elective. Courses taken at another institution must be approved in a letter of permission from the Carleton University Registrar.

- No more than 1.0 credit may be taken as ARTH 4900 Directed Readings and Research or ARTH 4909 [1.0] Honours Research Essay.

Art History

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (6.5 credits)

1. 2.5 credits in:	2.5
ARTH 1100 [0.0] Art and Society: Prehistory to the Renaissance	
ARTH 1101 [0.0] Art and Society: Renaissance to the Present	
ARTH 2009 [0.5] Art Live: Art History Workshop	
ARTH 3100 [0.5] History and Methods of Art and Architectural History	
ARTH 3108 [0.0] History and Methods of Art History	
2. 0.5 credit from:	0.5
ARTH 2102 [0.5] Greek Art and Archaeology	
ARTH 2105 [0.5] Roman Art and Archaeology	
ARTH 2107 [0.5] Islamic Architecture and Art	
ARTH 2202 [0.5] Medieval Architecture and Art	
ARTH 2300 [0.5] Italian Renaissance Art	
3. 0.5 credit from:	0.5
ARTH 2502 [0.5] Art of the 19th Century	
ARTH 2600 [0.5] Modern European Art 1900-1945	
ARTH 2601 [0.0] History and Theory of Photography	
4. 0.5 credit from:	0.5
ARTH 2002 [0.5] Historical Art in Canada	
ARTH 2003 [0.5] Canadian Twentieth-Century and Contemporary Art	
5. 0.5 credit from:	0.5
ARTH 2005 [0.5] Arts of the First Peoples: The Woodlands, the Plains and the Subarctic	
ARTH 2006 [0.5] Arts of the First Peoples: The Southwest, the West Coast and the Arctic	
ARTH 2007 [0.5] Asian Art	
ARTH 2008 [0.5] Inuit Art	
ARTH 2106 [0.5] Chinese Art and Visual Culture	
6. 0.5 credit in ARTH at the 3000 level or above	0.5
7. 1.5 credits in ARTH at the 4000 level collectively	1.5
satisfying:	
a. 0.5 credit in ARTH (excluding ARTH 4900, ARTH 4909)	
b. 1.0 credit in ARTH at the 4000 level	
B. Additional Requirements (13.5 credits)	13.5
8. The requirements of the other discipline must be satisfied	
9. Sufficient free electives to make 20.0 credits in total for the program.	
Total Credits	20.0

Note:

- Art History majors may take up to 1.0 credit in studio art courses from an accredited university as an elective. Courses taken at another institution must be approved in a letter of permission from the Carleton University Registrar.

- No more than 1.0 credit may be taken as ARTH 4900 Directed Readings and Research or ARTH 4909 [1.0] Honours Research Essay.

Art History

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.5 credits)

1. 2.5 credits in:	2.5
ARTH 1100 [0.0] Art and Society: Prehistory to the Renaissance	
ARTH 1101 [0.0] Art and Society: Renaissance to the Present	
ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present	
ARTH 2009 [0.5] Art Live: Art History Workshop	
ARTH 3100 [0.5] History and Methods of Art and Architectural History	
2. 1.0 credit from:	1.0
ARTH 2102 [0.5] Greek Art and Archaeology	
ARTH 2105 [0.5] Roman Art and Archaeology	
ARTH 2107 [0.5] Islamic Architecture and Art	
ARTH 2202 [0.5] Medieval Architecture and Art	
ARTH 2300 [0.5] Italian Renaissance Art	
3. 1.0 credit from:	1.0
ARTH 2502 [0.5] Art of the 19th Century	
ARTH 2600 [0.5] Modern European Art 1900-1945	
ARTH 2601 [0.0] History and Theory of Photography	
4. 0.5 credit from:	0.5
ARTH 2002 [0.5] Historical Art in Canada	
ARTH 2003 [0.5] Canadian Twentieth-Century and Contemporary Art	
5. 0.5 credit from:	0.5
ARTH 2005 [0.5] Arts of the First Peoples: The Woodlands, the Plains and the Subarctic	
ARTH 2006 [0.5] Arts of the First Peoples: The Southwest, the West Coast and the Arctic	
ARTH 2007 [0.5] Asian Art	
ARTH 2008 [0.5] Inuit Art	
ARTH 2106 [0.5] Chinese Art and Visual Culture	
6. 1.0 credit in ARTH at the 3000 level	1.0
B. Credits Not Included in the Major CGPA (8.5 credits)	
7. 6.0 credits in electives not in ARTH	6.0
8. 2.5 credits in free electives	2.5
Total Credits	15.0

Note: Art History majors may take up to 1.0 credit in studio art courses from an accredited university as an elective. Courses taken at another institution must be approved in a letter of permission from the Carleton University Registrar.

Minor in Art History (4.0 credits)

Open to all undergraduate degree students not in Art History programs.

Requirements

1. 1.0 credit in:	1.0
ARTH 1100 [0.0] Art and Society: Prehistory to the Renaissance	

ARTH 1101 [0.0] Art and Society: Renaissance to the Present	
2. 1.5 credits in ARTH at the 2000-level	1.5
3. 1.5 credits in ARTH at the 3000- or 4000-level	1.5
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Post-Baccalaureate Diploma in Art History (4.0 credits)

Admission to this program requires the permission of the Art History program. Normally, students would be required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Requirements:

1. 1.0 credit in:	1.0
ARTH 3100 [0.5] History and Methods of Art and Architectural History	
ARTH 3108 [0.0] History and Methods of Art History	
2. 2.0 credit in ARTH at the 2000-level or above (excluding ARTH 2009)	2.0
3. 1.0 credit in ARTH at the 4000-level	1.0
Total Credits	4.0

With the approval of the Art History undergraduate supervisor, 0.5 credit may be taken outside the department.

History and Theory of Architecture B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 3.0 credits in:	3.0
ARTH 1101 [0.0] Art and Society: Renaissance to the Present	
ARTH 1200 [0.0] History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present	
ARTH 2710 [0.5] Experiencing Architecture	
ARTH 3100 [0.5] History and Methods of Art and Architectural History	
ARTH 3107 [0.5] History and Methods of Architectural History	
2. 2.0 credits from:	2.0
ARTH 2102 [0.5] Greek Art and Archaeology	
ARTH 2105 [0.5] Roman Art and Archaeology	
ARTH 2107 [0.5] Islamic Architecture and Art	
ARTH 2202 [0.5] Medieval Architecture and Art	
ARTH 2310 [0.5] Architecture of the Early Modern World [1400-1750]	
ARTH 2510 [0.5] Architecture of the 18th and 19th Centuries	
ARTH 2610 [0.0] Twentieth-Century Architecture	
3. 1.0 credit from:	1.0
ARTH 3002/ ARCH 4002 [0.5] Canadian Architecture	
ARTH 3003 [0.5] Architecture and Representation	
ARTH 3005 [0.5] American Architecture	
ARTH 3701 [0.5] Art and Architecture on Site	

ARTH 3710 [0.5]	Architecture and Empire	
ARTH 3810 [0.5]	A Closer Look at the Designed Environment	
4. 1.0 credits in ARTH or ARCH at the 2000-level or higher		1.0
5. 0.5 credit from:		0.5
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art	
ARTH 4202 [0.5]	Topics in Medieval Architecture and Art	
ARTH 4610 [0.5]	Topics in Modern Architecture or Design	
ARTH 4800 [0.5]	Topics in Architectural History	
6. 1.5 credits in ARTH or ARCH at the 4000-level		1.5
7. 1.0 credit from:		1.0
ARCH 4200 [0.5]	Architectural Conservation Philosophy and Ethics	
ARCN 4100 [0.5]	Historic Site Recording and Assessment	
CDNS 2400 [0.5]	Heritage Places and Practices in Canada	
CDNS 4400 [0.5]	Space, Landscape and Identity in Canada	
GEOG 1020 [0.5]	People, Places and Environments	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 3021 [0.5]	Geographies of Culture and Identity	
HIST at the 1000-level or higher		
IDES 1000 [0.5]	Theory and History of Design	
B. Credits Not Included in the Major CGPA (10.0 credits)		
8. 8.0 credits in electives not in ARTH or Architecture		8.0
9. 2.0 credits in free electives.		2.0
Total Credits		20.0

Notes for programs in History and Theory of Architecture:

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

History and Theory of Architecture B.A. Combined Honours (20.0 credits)

A. Credits included in the major CGPA (6.5 Credits)

1. 2.5 credits in:		2.5
ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present	
ARTH 2710 [0.5]	Experiencing Architecture	
ARTH 3100 [0.5]	History and Methods of Art and Architectural History	
ARTH 3107 [0.5]	History and Methods of Architectural History	
2. 1.5 credits from:		1.5
ARTH 2102 [0.5]	Greek Art and Archaeology	
ARTH 2105 [0.5]	Roman Art and Archaeology	

ARTH 2107 [0.5]	Islamic Architecture and Art	
ARTH 2202 [0.5]	Medieval Architecture and Art	
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	
ARTH 2610 [0.0]	Twentieth-Century Architecture	
3. 1.0 credit from:		1.0
ARTH 3002/ ARCH 4002 [0.5]	Canadian Architecture	
ARTH 3003 [0.5]	Architecture and Representation	
ARTH 3005 [0.5]	American Architecture	
ARTH 3701 [0.5]	Art and Architecture on Site	
ARTH 3710 [0.5]	Architecture and Empire	
ARTH 3810 [0.5]	A Closer Look at the Designed Environment	
4. 0.5 credit from:		0.5
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art	
ARTH 4202 [0.5]	Topics in Medieval Architecture and Art	
ARTH 4610 [0.5]	Topics in Modern Architecture or Design	
ARTH 4800 [0.5]	Topics in Architectural History	
5. 1.0 credits in ARTH or ARCH or ARCN at the 4000-level		1.0
B. Additional Requirements (13.5)		
13.5		
6. The requirements of the other discipline must be satisfied		
7. Sufficient free electives to make 20.0 credits in total for the program		
Total Credits		20.0

History and Theory of Architecture B.A. (15.0 credits)

A. Credits Included in the Major CGPA

1. 2.5 credits in:		2.5
ARTH 1101 [0.0]	Art and Society: Renaissance to the Present	
ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present	
ARTH 2710 [0.5]	Experiencing Architecture	
ARTH 3100 [0.5]	History and Methods of Art and Architectural History	
2. 1.5 credits from:		1.5
ARTH 2102 [0.5]	Greek Art and Archaeology	
ARTH 2105 [0.5]	Roman Art and Archaeology	
ARTH 2107 [0.5]	Islamic Architecture and Art	
ARTH 2202 [0.5]	Medieval Architecture and Art	
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	
ARTH 2610 [0.0]	Twentieth-Century Architecture	
3. 1.0 credit from:		1.0
ARTH 3002/ ARCH 4002 [0.5]	Canadian Architecture	
ARTH 3003 [0.5]	Architecture and Representation	

ARTH 3005 [0.5]	American Architecture	
ARTH 3107 [0.5]	History and Methods of Architectural History	
ARTH 3701 [0.5]	Art and Architecture on Site	
ARTH 3710 [0.5]	Architecture and Empire	
ARTH 3810 [0.5]	A Closer Look at the Designed Environment	
4. 0.5 credit in ARTH or ARCH at the 2000-level or higher		0.5
5. 1.5 credits in ARTH or ARCH at the 3000-level		1.5
B. Credits Not Included in the Major CGPA		
6. 6.0 credits in electives not in ARTH or Architecture		6.0
7. 2.0 credit in free electives.		2.0
Total Credits		15.0

Notes for programs in History and Theory of Architecture:

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

Minor in History and Theory of Architecture (4.0 credits)

Open to all undergraduate degree students not in History and Theory of Architecture programs.

Requirements

1. 1.0 credit in:		1.0
ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present	
2. 1.5 credits from:		1.5
ARTH 2102 [0.5]	Greek Art and Archaeology	
ARTH 2105 [0.5]	Roman Art and Archaeology	
ARTH 2107 [0.5]	Islamic Architecture and Art	
ARTH 2202 [0.5]	Medieval Architecture and Art	
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	
ARTH 2610 [0.0]	Twentieth-Century Architecture	
3. 1.5 credits from:		1.5
ARTH 3002/ ARCH 4002 [0.5]	Canadian Architecture	
ARTH 3005 [0.5]	American Architecture	
ARTH 3100 [0.5]	History and Methods of Art and Architectural History	
ARTH 3710 [0.5]	Architecture and Empire	
ARTH 3810 [0.5]	A Closer Look at the Designed Environment	
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art	
ARTH 4202 [0.5]	Topics in Medieval Architecture and Art	

ARTH 4610 [0.5]	Topics in Modern Architecture or Design	
ARTH 4800 [0.5]	Topics in Architectural History	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Post-Baccalaureate Diploma in History and Theory of Architecture (4.0 credits)

Admission to this program requires the permission of the History and Theory of Architecture program. Normally, students would be required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Requirements:

1. 1.0 credit in:		1.0
ARTH 3100 [0.5]	History and Methods of Art and Architectural History	
ARTH 3107 [0.5]	History and Methods of Architectural History	
2. 2.0 credit in ARTH at the 2000-level or above (excluding ARTH 2710)		2.0
3. 1.0 credit in ARTH at the 4000-level		1.0
Total Credits		4.0

With the approval of the History and Theory of Architecture undergraduate supervisor, 0.5 credit may be taken outside the department.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EARR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political

Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Art and Architectural History (ARTH) Courses

ARTH 1100 [0.5 credit]

Art and Society: Prehistory to the Renaissance

A survey of art, architecture and artifacts from prehistory to the Renaissance. Ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1101 [0.5 credit]

Art and Society: Renaissance to the Present

A survey of art, architecture and related visual forms in their expanding contexts from the Renaissance to the present. Ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1105 [0.5 credit]

Art as Visual Communication

A variety of visual material is organized topically to examine the elements of art (line, shape, value, colour, texture, space), the principles of pictorial organization, the materials and techniques of art, and recurrent tendencies in artistic styles and outlooks.

Lectures three hours a week.

ARTH 1200 [0.5 credit]

History and Theory of Architecture: Prehistory to 1500

An introduction to the history of architecture from prehistory to ca. 1500, considering technological, formal, intellectual and social developments that informed the built environment through a range of building types.

Lectures two hours a week, tutorial one hour a week.

ARTH 1201 [0.5 credit]

History and Theory of Architecture: 1500 to Present

An introduction to the history of architecture from ca. 1500 to the present, considering technological, formal, intellectual, and social developments that informed the built environment through a range of building types.

Precludes additional credit for ARTH 2608 (no longer offered).

Lectures two hours a week, tutorial one hour a week.

ARTH 2002 [0.5 credit]

Historical Art in Canada

A survey of historical art in Canada, from the seventeenth century to the early twentieth century. Topics may include craftwork, amateur and professional artists, art institutions, gender, nationalism, regionalism and ethnicity. Coverage will include artworks in local and national collections in the National Capital region.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2003 [0.5 credit]**Canadian Twentieth-Century and Contemporary Art**

A survey of twentieth-century and contemporary Canadian art in a variety of media within social, political and cultural contexts. Regionalism, multiculturalism, nationalism, gender, race and identity will be considered in relation to local and national collections in Ottawa.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2005 [0.5 credit]**Arts of the First Peoples: The Woodlands, the Plains and the Subarctic**

Introduction to the visual arts of Indigenous peoples of the eastern and central regions of North America. A post-colonial perspective will be used to consider selected examples of creative production from time immemorial to the present.

Prerequisite(s): second-year standing or permission of the discipline.

Lectures three hours a week.

ARTH 2006 [0.5 credit]**Arts of the First Peoples: The Southwest, the West Coast and the Arctic**

Introduction to the visual arts of Indigenous peoples of the western and northern regions of North America. A post-colonial perspective will be used to consider selected examples of visual materials from time immemorial to the present.

Prerequisite(s): second-year standing or permission of the discipline.

Lectures three hours a week.

ARTH 2007 [0.5 credit]**Asian Art**

Surveys Asian art from second-century China to post-war Japan. Representational strategies of court artists and artists from the capital are compared with artists on the periphery. Articulation of power in tombs, palaces and war propaganda is examined, as is the individual and the eccentric.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2008 [0.5 credit]**Inuit Art**

Survey of visual art produced by Canadian Inuit from the circumpolar area.

Precludes additional credit for ARTH 3104.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2009 [0.5 credit]**Art Live: Art History Workshop**

Examination of techniques, materials and institutions of art history; lectures and workshops on art historical research and writing, the materials of art, professional skills; site visits to art institutions.

Includes: Experiential Learning Activity

Prerequisite(s): ARTH 1100 and ARTH 1101, or permission of the discipline. Restricted to students enrolled in the Art History B.A. or B.A. Honours.

Lecture three hours a week.

ARTH 2102 [0.5 credit]**Greek Art and Archaeology**

The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as CLCV 2303.

Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2105 [0.5 credit]**Roman Art and Archaeology**

The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as CLCV 2304.

Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2106 [0.5 credit]**Chinese Art and Visual Culture**

A survey of Chinese art from the pre-modern era to re-inventions of traditions in modern and contemporary art. Artworks in various media (ink painting, calligraphy, Buddhist sculpture, ceramics, lacquer and garden architecture) will be studied in their historical, cultural and socio-political contexts.

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2107 [0.5 credit]**Islamic Architecture and Art**

Survey of artistic movements in Islamic art and architecture in the Mediterranean, the Near East, and Central and South Asia, from the seventh century to ca. 1450. Commonalities and differences between major dynastic visual cultures will be explored.

Prerequisite(s): second-year standing or permission of the Discipline.

Lecture three hours a week.

ARTH 2108 [0.5 credit]**Art Worlds**

Survey of an area of global art history. Topics may vary from year to year, and will be posted on the School for Studies in Art and Culture website.

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2202 [0.5 credit]**Medieval Architecture and Art**

A survey of architecture and art in Europe from ca. 313-1500 C.E. Sacred, secular, and domestic works will be discussed with reference to cultural meaning, social function, structure, and form.

Precludes additional credit for ARTH 2200 and ARTH 2201.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2300 [0.5 credit]**Italian Renaissance Art**

An examination of major works of art and architecture, issues and themes in the Italian Renaissance; emphasis on the fifteenth and sixteenth centuries, with a look at roots in the fourteenth.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2310 [0.5 credit]**Architecture of the Early Modern World [1400-1750]**

An examination of architecture from the late medieval period to the 18th century with particular attention paid to architecture and design cultures within the European and Islamic worlds and their cross-cultural interactions.

Precludes additional credit for ARTH 3305 (no longer offered).

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2404 [0.5 credit]**Art of the 17th and 18th Centuries**

Tracing developments in 17th- and 18th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and society.

Precludes additional credit for ARTH 2403 (no longer offered), ARTH 2405 (no longer offered) and ARTH 2406 (no longer offered).

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2502 [0.5 credit]**Art of the 19th Century**

Tracing developments in 19th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and modernity.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2510 [0.5 credit]**Architecture of the 18th and 19th Centuries**

A survey of key monuments, theories, forms and technological developments of eighteenth- and nineteenth-century architecture.

Precludes additional credit for ARTH 3809 Section "B" taken in 2014.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2600 [0.5 credit]**Modern European Art 1900-1945**

Major artistic movements in Europe from about 1900 to 1945.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2601 [0.5 credit]**History and Theory of Photography**

Issues, themes, movements in photography and individual photographers from the origins of the medium to the present.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2610 [0.5 credit]**Twentieth-Century Architecture**

Developments in architectural form and culture through the course of the twentieth century, with emphasis on the formation and subsequent critique of the Modern Movement.

Precludes additional credit for ARTH 3609 and ARCH 3009.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2710 [0.5 credit]**Experiencing Architecture**

Development of critical thinking, writing, and looking skills in connection to architecture, through a combination of site visits, workshops and classroom exercises.

Includes: Experiential Learning Activity

Prerequisite(s): ARTH 1200 and ARTH 1201 or permission of the discipline. Restricted to students in the History and Theory of Architecture B.A. or B.A. Honours program.

Lecture three hours a week.

ARTH 2807 [0.5 credit]**Philosophy of Art**

Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences.

Also listed as PHIL 2807.

Lectures three hours a week.

ARTH 3000 [0.5 credit]**Themes in Canadian Art**

Selected aspects of Canadian art in a variety of media. Students will be exposed to works in the National Capital region.

Prerequisite(s): ARTH 2002 or ARTH 2003 or (for a photography topic) ARTH 2601 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3002 [0.5 credit]**Canadian Architecture**

Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques.

Includes: Experiential Learning Activity

Also listed as ARCH 4002.

Prerequisite(s): ARTH 1100 and ARTH 1101, or ARTH 1200 and ARTH 1201, or ARCH 1002 and ARCH 1201, and second-year standing or higher, or permission of the Discipline.

ARTH 3003 [0.5 credit]**Architecture and Representation**

Examination of the intersections between architecture, representations, and cultures.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing, or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3005 [0.5 credit]**American Architecture**

The cultural history of the United States as expressed through its architectural heritage. Selected buildings and complexes from the earliest settlements through the early twentieth century are examined.

Prerequisite(s): ARTH 1201 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3007 [0.5 credit]**Modern Asian Art**

Modern and contemporary art in East Asia, beginning in Japan with the 1868 Meiji revolution and the 1911 revolution in China.

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

ARTH 3008 [0.5 credit]**Contemporary Chinese Art and Art History**

Modern and contemporary art in China and beyond from the reform period in 1979 until today. Artworks will be examined in terms of their (art-)historical, discursive, socio-political, infrastructural and transcultural conditions of production and reception.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 3100 [0.5 credit]**History and Methods of Art and Architectural History**

The study of the history of art and architectural history and the methodologies and research tools employed.

Precludes additional credit for ARTH 3106 (no longer offered).

Prerequisite(s): third-year or higher standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 3102 [0.5 credit]**Studies in Greek Art**

A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year. This course is repeatable for credit when the topic changes.

Also listed as CLCV 3306, RELI 3732.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

ARTH 3105 [0.5 credit]**Studies in Roman Art**

A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.

Also listed as CLCV 3307, RELI 3733.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

ARTH 3107 [0.5 credit]**History and Methods of Architectural History**

The study of the methodologies and research approaches employed by architectural historians.

Prerequisite(s): ARTH 3100 and third-year standing or higher in History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 3108 [0.5 credit]**History and Methods of Art History**

The study of current methodologies and research tools employed by art historians.

Precludes additional credit for ARTH 3106 (no longer offered).

Prerequisite(s): ARTH 3100 and third-year standing or higher in Art History, or permission of the Discipline.

Seminar three hours a week.

ARTH 3400 [0.5 credit]**History of Printmaking**

Exploration of printmaking techniques from the 16th century to the present focusing on the work of famous and lesser-known printmakers. Topics may include: printmaking genres (from fine art prints to caricature), originality versus reproduction, book illustration, the art market, posters and propaganda.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3507 [0.5 credit]**The Artist in Context**

An examination of one artist's or group of artists' life and work. Relevant artistic, intellectual, social, political and theoretical contexts are considered.

Prerequisite(s): ARTH 1101 or ARTH 2502 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3600 [0.5 credit]**Art Since 1945**

Contemporary art in the global context from 1945 to the present, including Abstract Expressionism, Pop Art, Postmodernism, object art, performance art and installations.

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

Lecture three hours a week.

ARTH 3701 [0.5 credit]**Art and Architecture on Site**

The study of art and/or architecture on site outside the National Capital Region, in Canada or internationally.

May include a combination of study in Ottawa and on site. Locations vary. Students are expected to bear all travel and other costs arising from site visits.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Discipline. Applicants will normally have third-year standing with a minimum of 1.0 credit in Art History or History and Theory of Architecture and a GPA of 8.0 or above.

Hours to be arranged. Locations will vary.

ARTH 3705 [0.5 credit]**Selected Museum Exhibition**

This seminar complements a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or higher or permission of the Discipline.

Seminar and/or lectures three hours a week.

ARTH 3710 [0.5 credit]**Architecture and Empire**

The impact of imperial power and aspiration on the built environment, from the Ancient world to the present day, taking 'empire' in its broadest political, social and economic sense.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.

Seminar and/or lectures three hours a week.

ARTH 3809 [0.5 credit]**A Closer Look at Art and Visual Culture**

Selected aspects of art history and visual culture from ancient times to the present.

Prerequisite(s): third-year standing or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3810 [0.5 credit]**A Closer Look at the Designed Environment**

Selected aspects of the history of the designed environment, from ancient times to the present.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3900 [0.5 credit]**Practicum in Art and Architectural History**

Practical experience gained by working on specific projects under the supervision of the staff of a museum, cultural institution, public- or private-sector organization associated with art, architecture, design, or heritage. A maximum of 1.0 credit in practicum courses may be used to fulfill program requirements.

Includes: Experiential Learning Activity

Prerequisite(s): B.A. or B.A. (Honours) in Art History or History and Theory of Architecture with third-year standing or higher and a CGPA of 9.00 or better in ARTH courses, and permission of the Discipline.

ARTH 4000 [0.5 credit]**Topics in Art in Canada**

Selected topics in art in Canada. Students will be exposed to works in local and national collections in the National Capital region.

Prerequisite(s): one of ARTH 2002, ARTH 2003, ARTH 3000 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminars three hours a week.

ARTH 4002 [0.5 credit]**Topics in Architecture in Canada**

Selected aspects of the designed environment in Canada.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the discipline.

ARTH 4003 [0.5 credit]**Topics in Contemporary Chinese Art**

Critical examination of contemporary Chinese art. Topics include socially engaged art, historiographies of Chinese contemporary art, re-inventions of traditions, gender and politics of the body, exhibition histories and infrastructures of contemporary art in China.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4005 [0.5 credit]**Topics in Contemporary Indigenous Art**

This course will use critical theory to examine aspects of contemporary visual art created by the Inuit and First Peoples in North America.

Prerequisite(s): ARTH 2005 or ARTH 2006 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4007 [0.5 credit]**Topics in Asian Art**

A selected topic in East Asian Art, which may include 19th century Ukiyo-e woodblock prints, The Gutai Group, performance art in China and Japan, and contemporary Chinese art.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4008 [0.5 credit]**Transnational Theory**

Critical examination of transnational theories of cultural analysis, including Orientalism, Post-Colonial theory, translation theory and theories of cultural hybridity.

Precludes additional credit for ARTH 3103.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4107 [0.5 credit]**Topics in Islamic Architecture and Art**

Selected aspects of Islamic Architecture and Art.

Prerequisite(s): ARTH 2107 or ARTH 2310 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4202 [0.5 credit]**Topics in Medieval Architecture and Art**

Selected aspects of Medieval or Medievalist Architecture and Art.

Prerequisite(s): ARTH 2202 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4305 [0.5 credit]**Topics in Renaissance Art**

Selected aspects of Renaissance art and society.

Prerequisite(s): ARTH 2300 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4402 [0.5 credit]**Topics in Art of the 18th and 19th Centuries**

Selected aspects of 18th-century and/or 19th-century art. Precludes additional credit for ARTH 4406 (no longer offered), ARTH 4505 (no longer offered).

Prerequisite(s): ARTH 2404 or ARTH 2405 or ARTH 2406 or ARTH 2502 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4600 [0.5 credit]**Art, Architecture, and Gender**

Art and/or architectural creation, reception and/or historiography through the lens of gender identities.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4602 [0.5 credit]**Issues in the Theory and History of Photography**

Relates the themes of selected theoretical texts on photography to specific examples of photographic practice.

Prerequisite(s): ARTH 2601 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4610 [0.5 credit]**Topics in Modern Architecture or Design**

Selected topics in architecture and design of the Modern era.

Prerequisite(s): ARTH 2610 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4701 [0.5 credit]**Art and Architecture on Site**

Intensive study of art and/or architecture on site outside the National Capital region, in Canada or internationally. May include a combination of study in Ottawa and on site. Students are expected to bear all travel and other costs arising from site visits.

Includes: Experiential Learning Activity

Prerequisite(s): Permission of the Discipline. Applicants will normally have fourth-year standing in Art History or History and Theory of Architecture and a CGPA of 8.0 or above.

Hours to be arranged. Locations vary.

ARTH 4705 [0.5 credit]**Seminar: Selected Museum Exhibition**

Studies a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.

Lectures and/or seminar three hours a week.

ARTH 4800 [0.5 credit]**Topics in Architectural History**

Selected aspects of architectural history from ancient times to the present.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4809 [0.5 credit]**Topics in Art History and Criticism**

Selected aspects of art history and/or criticism from ancient times to the present.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4900 [0.5 credit]**Directed Readings and Research**

Supervised readings and research projects. Guidelines must be obtained from the Undergraduate Supervisor prior to registration. A written project outline, approved by the supervising Art History or History and Theory of Architecture faculty member, must be submitted by the last day for course changes.

Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.

ARTH 4909 [1.0 credit]**Honours Research Essay**

An essay of approximately 10,000 words, resulting from independent research, supervised by Art History or History and Theory of Architecture faculty.

Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture with a minimum CGPA of 9.00 and permission of the Discipline.

Biochemistry

This section presents the requirements for programs in:

- Biochemistry B.Sc. Honours
- Biochemistry and Biotechnology B.Sc. Honours
- Computational Biochemistry B.Sc. Honours
- Biochemistry B.Sc. Major

Requirements for the program Biochemistry and Biotechnology are presented in the Biotechnology program section of this Calendar.

Program Requirements

Course Categories for Biochemistry

The program descriptions below make use of the following course categories that are defined in the Regulations for the B.Sc.

- Approved Courses Outside the Faculties of Science and Engineering and Design
- Free Electives

Biochemistry

B.Sc. Honours (20.0 credits)

A. Credits included in the Major CGPA (13.5 credits)

1. 2.0 credits in:		2.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 3104 [0.5]	Molecular Genetics	
2. 0.5 credit from:		0.5
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
3. 0.5 credit from:		0.5
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
4. 1.0 credit from:		1.0
BIOL 3102 [0.5]	Mycology	
BIOL 3201 [0.5]	Cell Biology	
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3301 [0.5]	Biotechnology II	
BIOL 3303 [0.5]	Experimental Microbiology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
BIOL 3501 [0.5]	Biomechanics	
BIOL 4008 [0.5]	Molecular Plant Development	
BIOL 4103 [0.5]	Population Genetics	
BIOL 4104 [0.5]	Evolutionary Genetics	
BIOL 4106 [0.5]	Advances in Molecular Biology	
BIOL 4109 [0.5]	Laboratory Techniques in Molecular Genetics	
BIOL 4200 [0.5]	Immunology	
BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
BIOL 4206 [0.5]	Human Genetics	
BIOL 4207 [0.5]	Advanced Embryology & Developmental Biology	
BIOL 4209 [0.5]	Advanced Plant Physiology	
BIOL 4300 [0.5]	Applied Microbiology	

BIOL 4301 [0.5]	Current Topics in Biotechnology	
BIOL 4304 [0.5]	Forensic Biology	
BIOL 4306 [0.5]	Animal Neurophysiology	
BIOL 4309 [0.5]	Studies in Human Performance	
BIOL 4317 [0.5]	Neuroethology: The Neural Basis of Animal Behaviour	
BIOL 4318 [0.5]	Adaptations to Extreme Environments	
BIOL 4319 [0.5]	Studies in Exercise Physiology	
5. 4.0 credits in:		4.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2103 [0.5]	Physical Chemistry I	
or BIOC 2300 [0.5]	Physical Biochemistry	
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2204 [0.5]	Organic Chemistry II	
CHEM 2303 [0.5]	Analytical Chemistry II	
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry	
CHEM 3201 [0.5]	Advanced Organic Chemistry I	
6. 0.5 credit from:		0.5
CHEM 3202 [0.5]	Advanced Organic Chemistry II	
CHEM 3205 [0.5]	Experimental Organic Chemistry	
7. 3.5 credits in:		3.5
BIOC 2200 [0.5]	Cellular Biochemistry	
BIOC 3101 [0.5]	General Biochemistry I	
BIOC 3102 [0.5]	General Biochemistry II	
BIOC 3103 [0.5]	Practical Biochemistry I	
BIOC 3104 [0.5]	Practical Biochemistry II	
BIOC 3202 [0.5]	Biophysical Techniques and Applications	
BIOC 4001 [0.5]	Methods in Biochemistry	
8. 0.5 credit from:		0.5
BIOC 3008 [0.5]	Bioinformatics	
BIOC 3203 [0.5]	Biochemical Pharmacology	
BIOC 4004 [0.5]	Industrial Biochemistry	
BIOC 4005 [0.5]	Biochemical Regulation	
BIOC 4007 [0.5]	Membrane Biochemistry	
BIOC 4008 [0.5]	Computational Systems Biology	
BIOC 4009 [0.5]	Biochemistry of Disease	
BIOC 4200 [0.5]	Immunology	
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering	
BIOC 4202 [0.5]	Mutagenesis and DNA Repair	
BIOC 4203 [0.5]	Advanced Metabolism	
BIOC 4204 [0.5]	Protein Biotechnology	
BIOC 4708 [0.5]	Principles of Toxicology	
9. 1.0 credit from:		1.0
BIOC 4906 [1.0]	Interdisciplinary Research Project	
BIOC 4907 [1.0]	Honours Essay and Research Proposal	
BIOC 4908 [1.0]	Research Project	
B. Credits Not Included in the Major CGPA (6.5 credits)		
10. 1.0 credit from:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
or		

PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
& PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
11. 1.5 credits in:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
12. 2.0 credits in	Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
13. 1.5 credits from:		1.5
BIOC courses listed in but not used to fulfill Item 8 above, one of:		
BIOC 2400 [0.5]	Independent Research I	
BIOC 3400 [0.5]	Independent Research II	
BIOC 4901 [0.5]	Selected Topics in Biochemistry	
BIOC 4008 [0.5]	Computational Systems Biology	
BIOL courses listed in but not used to fulfill Item 4 above		
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2301 [0.5]	Biotechnology I	
BIOL 2303 [0.5]	Microbiology	
CHEM courses listed in but not used to fulfill Item 6 above:		
CHEM 3100 [0.5]	Physical Chemistry II	
CHEM 3101 [0.5]	Quantum Chemistry	
CHEM 3102 [0.5]	Methods of Computational Chemistry	
CHEM 3106 [0.5]	Computational Chemistry Methods Laboratory	
CHEM 3107 [0.5]	Experimental Methods in Nanoscience	
CHEM 3504 [0.5]	Inorganic Chemistry II	
CHEM 3600 [0.5]	Introduction to Nanotechnology	
CHEM 3700 [0.5]	Industrial Applications of Chemistry	
CHEM 3800 [0.5]	The Chemistry of Environmental Pollutants	
CHEM 4201 [0.5]	Macromolecular Nanotechnology	
CHEM 4202 [0.5]	Advanced Topics in Organic Chemistry I	
CHEM 4203 [0.5]	Synthetic Organic Chemistry	
CHEM 4206 [0.5]	Natural Products Chemistry	
CHEM 4406 [0.5]	Pharmaceutical Drug Design	
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2604 [0.5]	Modern Physics I	
MATH 2007 [0.5]	Elementary Calculus II	
MATH 2008 [0.5]	Intermediate Calculus	
MATH 2107 [0.5]	Linear Algebra II	
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
COMP 2401 [0.5]	Introduction to Systems Programming	
14. 0.5 credit in	free electives.	0.5
Total Credits		20.0

Biochemistry and Biotechnology B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (15.0 credits)

1. 4.0 credits in:	4.0
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2301 [0.5]	Biotechnology I
BIOL 2303 [0.5]	Microbiology
BIOL 3104 [0.5]	Molecular Genetics
BIOL 3301 [0.5]	Biotechnology II
BIOL 4301 [0.5]	Current Topics in Biotechnology
2. 0.5 credit from:	0.5
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
3. 0.5 credit from:	0.5
BIOL 3201 [0.5]	Cell Biology
BIOL 3205 [0.5]	Plant Biochemistry and Physiology
BIOL 3303 [0.5]	Experimental Microbiology
BIOL 3305 [0.5]	Human and Comparative Physiology
BIOL 4109 [0.5]	Laboratory Techniques in Molecular Genetics
4. 0.5 credit from:	0.5
BIOL 3102 [0.5]	Mycology
BIOL 3201 [0.5]	Cell Biology
BIOL 3303 [0.5]	Experimental Microbiology
BIOL 4106 [0.5]	Advances in Molecular Biology
BIOL 4109 [0.5]	Laboratory Techniques in Molecular Genetics
BIOL 4200 [0.5]	Immunology
BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
BIOL 4300 [0.5]	Applied Microbiology
BIOL 4303 [0.5]	Advances in Microbiology
5. 3.0 credits in:	3.0
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 3101 [0.5]	General Biochemistry I
BIOC 3102 [0.5]	General Biochemistry II
BIOC 3103 [0.5]	Practical Biochemistry I
BIOC 3104 [0.5]	Practical Biochemistry II
BIOC 3202 [0.5]	Biophysical Techniques and Applications
6. 1.0 credit from:	1.0
BIOC 4907 [1.0]	Honours Essay and Research Proposal
BIOL 4908 [1.0]	Research Project
7. 1.0 credit from:	1.0
BIOL 3008 [0.5]	Bioinformatics
or BIOC 3203 [0.5]	Biochemical Pharmacology
BIOC 4004 [0.5]	Industrial Biochemistry
BIOC 4005 [0.5]	Biochemical Regulation
BIOC 4007 [0.5]	Membrane Biochemistry
BIOC 4008 [0.5]	Computational Systems Biology
BIOC 4009 [0.5]	Biochemistry of Disease
BIOC 4200 [0.5]	Immunology

BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
BIOC 4202 [0.5]	Mutagenesis and DNA Repair
BIOC 4203 [0.5]	Advanced Metabolism
BIOC 4204 [0.5]	Protein Biotechnology
BIOC 4708 [0.5]	Principles of Toxicology
8. 4.0 credits in:	4.0
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I or BIOC 2300 [0.5] Physical Biochemistry
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry
CHEM 3201 [0.5]	Advanced Organic Chemistry I
9. 0.5 credit from:	0.5
BIOC courses listed in, but not used to fulfil, Item 7 above	
BIOC 2400 [0.5]	Independent Research I
BIOC 3400 [0.5]	Independent Research II
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4901 [0.5]	Selected Topics in Biochemistry
BIOL courses listed in, but not used to fulfil, Item 3 or 4	
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 3102 [0.5]	Mycology
BIOL 3202 [0.5]	Principles of Developmental Biology
BIOL 3306 [0.5]	Human Anatomy and Physiology
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology
BIOL 3501 [0.5]	Biomechanics
BIOL 4008 [0.5]	Molecular Plant Development
BIOL 4103 [0.5]	Population Genetics
BIOL 4104 [0.5]	Evolutionary Genetics
BIOL 4206 [0.5]	Human Genetics
BIOL 4207 [0.5]	Advanced Embryology & Developmental Biology
BIOL 4209 [0.5]	Advanced Plant Physiology
BIOL 4304 [0.5]	Forensic Biology
BIOL 4309 [0.5]	Studies in Human Performance
BIOL 4317 [0.5]	Neuroethology: The Neural Basis of Animal Behaviour
BIOL 4318 [0.5]	Adaptations to Extreme Environments
BIOL 4319 [0.5]	Studies in Exercise Physiology
BIOL courses listed in but not used to fulfil Item 4 above	
CHEM 3100 [0.5]	Physical Chemistry II
CHEM 3107 [0.5]	Experimental Methods in Nanoscience
CHEM 3202 [0.5]	Advanced Organic Chemistry II
CHEM 3205 [0.5]	Experimental Organic Chemistry
CHEM 3600 [0.5]	Introduction to Nanotechnology
CHEM 3700 [0.5]	Industrial Applications of Chemistry
CHEM 3800 [0.5]	The Chemistry of Environmental Pollutants

CHEM 4201 [0.5]	Macromolecular Nanotechnology	
CHEM 4406 [0.5]	Pharmaceutical Drug Design	
B. Credits Not Included in the Major CGPA (5.0 credits)		
10. 1.0 credit from:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and	
	Wave Motion	
11. 1.5 credits in:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
12. 2.0 credits in Approved Courses Outside the		2.0
Faculties of Science and Engineering and Design (may include NSCI 1000)		
13. 0.5 credit in free elective.		0.5
Total Credits		20.0

Computational Biochemistry B.Sc. Honours (20.0 credits)

A. Credits Included in the Major (13.5 credits)

1. 2.0 credits in:		2.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 3104 [0.5]	Molecular Genetics	
2. 3.0 credits in:		3.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2103 [0.5]	Physical Chemistry I	
or BIOC 2300 [0.5]	Physical Biochemistry	
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2303 [0.5]	Analytical Chemistry II	
CHEM 2501 [0.5]	Introduction to Inorganic and	
	Bioinorganic Chemistry	
3. 0.5 credit in:		0.5
CHEM 2204 [0.5]	Organic Chemistry II	
4. 4.0 credits in:		4.0
BIOC 2200 [0.5]	Cellular Biochemistry	
BIOC 3101 [0.5]	General Biochemistry I	
BIOC 3102 [0.5]	General Biochemistry II	
BIOC 3103 [0.5]	Practical Biochemistry I	
BIOC 3104 [0.5]	Practical Biochemistry II	
BIOC 3202 [0.5]	Biophysical Techniques and	
	Applications	
BIOC 3008 [0.5]	Bioinformatics	
BIOC 4008 [0.5]	Computational Systems Biology	
5. 1.5 credits in:		1.5
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
COMP 2401 [0.5]	Introduction to Systems	
	Programming	
6. 1.5 credits from:		1.5
MATH 1805 [0.5]	Discrete Structures I	
MATH 2107 [0.5]	Linear Algebra II	
STAT 2509 [0.5]	Introduction to Statistical Modeling	
	II	

MATH 2800 [0.5]	Discrete Mathematics and	
	Algorithms	
MATH 3800 [0.5]	Mathematical Modeling and	
	Computational Methods	
BIOC 2400 [0.5]	Independent Research I	
BIOC 3400 [0.5]	Independent Research II	
BIOC 4202 [0.5]	Mutagenesis and DNA Repair	
7. 1.0 credit in:		1.0
BIOC 4906 [1.0]	Interdisciplinary Research Project	
or BIOC 4908 [1.0]	Research Project	
B. Credits Not Included in the Major (6.5 credits)		
8. 1.0 credit from:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and	
	Wave Motion	
9. 2.0 credits in:		2.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
MATH 2007 [0.5]	Elementary Calculus II	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
10. 2.0 credits in Approved Courses Outside the		2.0
Faculties of Science and Engineering and Design (may include NSCI 1000)		
11. 1.0 credit in:		1.0
COMP 2402 [0.5]	Abstract Data Types and	
	Algorithms	
COMP at the 2000-level or above		
12. 0.5 credit in free electives.		0.5
Total Credits		20.0

Biochemistry B.Sc. Major (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)

1. 2.0 credits in:		2.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 3104 [0.5]	Molecular Genetics	
2. 0.5 credit from:		0.5
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
3. 0.5 credit from:		0.5
BIOL 3201 [0.5]	Cell Biology	
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3303 [0.5]	Experimental Microbiology	
BIOL 3305 [0.5]	Human and Comparative	
	Physiology	
BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and	
	Physiology	
4. 1.0 credit from:		1.0
BIOL 3102 [0.5]	Mycology	
BIOL 3201 [0.5]	Cell Biology	
BIOL 3202 [0.5]	Principles of Developmental	
	Biology	
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	

BIOL 3301 [0.5]	Biotechnology II
BIOL 3303 [0.5]	Experimental Microbiology
BIOL 3305 [0.5]	Human and Comparative Physiology
BIOL 3306 [0.5]	Human Anatomy and Physiology
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology
BIOL 3501 [0.5]	Biomechanics
BIOL 4008 [0.5]	Molecular Plant Development
BIOL 4103 [0.5]	Population Genetics
BIOL 4104 [0.5]	Evolutionary Genetics
BIOL 4106 [0.5]	Advances in Molecular Biology
BIOL 4109 [0.5]	Laboratory Techniques in Molecular Genetics
BIOL 4200 [0.5]	Immunology
BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
BIOL 4202 [0.5]	Mutagenesis and DNA Repair
BIOL 4206 [0.5]	Human Genetics
BIOL 4207 [0.5]	Advanced Embryology & Developmental Biology
BIOL 4209 [0.5]	Advanced Plant Physiology
BIOL 4300 [0.5]	Applied Microbiology
BIOL 4301 [0.5]	Current Topics in Biotechnology
BIOL 4304 [0.5]	Forensic Biology
BIOL 4306 [0.5]	Animal Neurophysiology
BIOL 4309 [0.5]	Studies in Human Performance
BIOL 4317 [0.5]	Neuroethology: The Neural Basis of Animal Behaviour
BIOL 4318 [0.5]	Adaptations to Extreme Environments
BIOL 4319 [0.5]	Studies in Exercise Physiology
5. 2.5 credits in:	2.5
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 3101 [0.5]	General Biochemistry I
BIOC 3102 [0.5]	General Biochemistry II
BIOC 3103 [0.5]	Practical Biochemistry I
BIOC 3104 [0.5]	Practical Biochemistry II
6. 1.0 credit from:	1.0
BIOC 3008 [0.5]	Bioinformatics
BIOC 3202 [0.5]	Biophysical Techniques and Applications
BIOC 3203 [0.5]	Biochemical Pharmacology
BIOC at the 4000-level	
7. 4.0 credits from:	4.0
CHEM 1001 [0.5]	General Chemistry I
& CHEM 1002 [0.5]	General Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
or BIOC 2300 [0.5]	Physical Biochemistry
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry
CHEM 3201 [0.5]	Advanced Organic Chemistry I
8. 0.5 credit from:	0.5
CHEM 3202 [0.5]	Advanced Organic Chemistry II
CHEM 3205 [0.5]	Experimental Organic Chemistry

B. Credits Not Included in the Major CGPA (8.0 credits)

9. 1.0 credit from:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and	
	Wave Motion	
10. 1.5 credits in:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
11. 2.0 credits in	Approved Courses Outside the	2.0
Faculties of Science and Engineering and Design (may		
include NSCI 1000)		
12. 3.0 credits from:		3.0
Biochemistry courses listed in but not used to fulfill Item		
6 above		
BIOC 4901 [0.5]	Selected Topics in Biochemistry	
Biology courses listed in, but not used to fulfill, Item 4		
above		
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2301 [0.5]	Biotechnology I	
BIOL 2303 [0.5]	Microbiology	
CHEM 3100 [0.5]	Physical Chemistry II	
CHEM 3101 [0.5]	Quantum Chemistry	
CHEM 3102 [0.5]	Methods of Computational	
	Chemistry	
CHEM 3106 [0.5]	Computational Chemistry Methods	
	Laboratory	
CHEM 3107 [0.5]	Experimental Methods in	
	Nanoscience	
CHEM 3202 [0.5]	Advanced Organic Chemistry II	
CHEM 3205 [0.5]	Experimental Organic Chemistry	
CHEM 3504 [0.5]	Inorganic Chemistry II	
CHEM 3600 [0.5]	Introduction to Nanotechnology	
CHEM 3700 [0.5]	Industrial Applications of Chemistry	
CHEM 3800 [0.5]	The Chemistry of Environmental	
	Pollutants	
CHEM 4201 [0.5]	Macromolecular Nanotechnology	
CHEM 4202 [0.5]	Advanced Topics in Organic	
	Chemistry I	
CHEM 4203 [0.5]	Synthetic Organic Chemistry	
CHEM 4206 [0.5]	Natural Products Chemistry	
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2604 [0.5]	Modern Physics I	
MATH 2007 [0.5]	Elementary Calculus II	
MATH 2008 [0.5]	Intermediate Calculus	
MATH 2107 [0.5]	Linear Algebra II	
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
COMP 2401 [0.5]	Introduction to Systems	
	Programming	
13. 0.5 credit in free electives.		0.5
Total Credits		20.0

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology
Chemistry	
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry
Earth Sciences	
ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology
Food Sciences	

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology

PSYC 2700 [0.5]	Introduction to Cognitive Psychology
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PSYC 3000 [1.0]	Design and Analysis in Psychological Research
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PSYC 3506 [0.5]	Cognitive Development
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PSYC 3700 [1.0]	Cognition (Honours Seminar)
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PSYC 3702 [0.5]	Perception
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PSYC 2307 [0.5]	Human Neuropsychology I
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PSYC 3307 [0.5]	Human Neuropsychology II
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Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except EARTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use EARTH 2401, EARTH 2402, and EARTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except EARTH 1010, EARTH 1011 and EARTH 2415. Earth Sciences students may use EARTH 2401, EARTH 2402, and EARTH 2403 only as free electives.

Engineering
 ENSC 2001
 FOOD (Food Science and Nutrition)
 GEOM (Geomatics)
 HLTH (Health Science)
 ISAP (Interdisciplinary Science Practice)
 MATH (Mathematics)
 NEUR (Neuroscience)
 PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
 Science Geography (see list above)
 Science Psychology (see list above)
 STAT (Statistics)
 TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All

email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op

program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process

and requirements with the International Student Services Office.

B.Sc. Biochemistry, Computational Biochemistry: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biochemistry and Computational Biochemistry students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: BIOC 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be

Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Biochemistry (BIOC) Courses

BIOC 2200 [0.5 credit]

Cellular Biochemistry

Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.

Includes: Experiential Learning Activity

Also listed as BIOL 2200.

Precludes additional credit for BIOL 2201.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1006 or CHEM 1002) or permission of the Institute. It is strongly recommended that students in Biochemistry programs take this course in their second year of study.

Lectures three hours a week, laboratory or tutorial four hours a week.

BIOC 2300 [0.5 credit]

Physical Biochemistry

Energy of biological systems, molecular interactions, diffusion principles, introduction to protein folding, structure and thermodynamics, ligand binding and nucleic acid structures; experimental design and data management.

Precludes additional credit for CHEM 2103.

Prerequisite(s): BIOC 2200 (can be taken concurrently with BIOC 2300) and MATH 1007 and MATH 1107, and (PHYS 1007 and PHYS 1008) or (PHYS 1003 and PHYS 1004).

Lectures three hours a week, tutorials three hours a week.

BIOC 2400 [0.5 credit]

Independent Research I

Students carry out a laboratory research project under the supervision of a faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to Honours students of second-year standing in a Biochemistry program with a GPA of 10.0 or higher in first year, and approval of the Director and a Faculty supervisor.

Laboratory research for at least three hours a week over two terms.

BIOC 3008 [0.5 credit]**Bioinformatics**

A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.

Includes: Experiential Learning Activity

Also listed as BIOL 3008 and COMP 3308.

Prerequisite(s): BIOC 2200 or BIOL 2200, or BIOL 2201, or permission of the Institute.

Lecture two hours a week, computer workshop three hours a week.

BIOC 3101 [0.5 credit]**General Biochemistry I**

Chemistry, structure and function of proteins, lipids, carbohydrates and nucleic acids. Monomers, linkages and types of biochemical polymers that are formed. Mechanism of action of enzymes, regulatory control mechanisms of proteins and integration of biochemical pathways.

Precludes additional credit for CHEM 3401.

Prerequisite(s): (BIOC 2200 or BIOL 2200), and (CHEM 2203 and CHEM 2204) or (CHEM 2207 and CHEM 2208) or permission of the Institute.

Lectures three hours a week.

BIOC 3102 [0.5 credit]**General Biochemistry II**

Anabolic and catabolic processes. Regulation of cell compartment (membranes, mitochondria, chloroplast, peroxisome, nuclei) composition. Genetic controls of transcription, translation and post-translational modification of protein structure and function. Biochemical processes of disease, development, and toxicology.

Prerequisite(s): BIOC 3101 and BIOL 2104.

Lectures three hours a week.

BIOC 3103 [0.5 credit]**Practical Biochemistry I**

Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, and BIOC 3202.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 3006 (no longer offered).

Prerequisite(s): (BIOC 2200 or BIOL 2200) and CHEM 2203 or permission of the Institute. CHEM 2204 and (BIOC 2300 or CHEM 2103) are also recommended. It is highly recommended that BIOC 3101 and BIOC 3202 be taken concurrently.

Laboratory four hours a week, tutorial one hour per week.

BIOC 3104 [0.5 credit]**Practical Biochemistry II**

Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, BIOC 3102, and BIOC 3202.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 3006 (no longer offered).

Prerequisite(s): BIOC 3103. It is highly recommended that BIOC 3102 be taken concurrently.

Laboratory four hours a week, tutorial one hour a week.

BIOC 3202 [0.5 credit]**Biophysical Techniques and Applications**

Theory and applications of current biochemical/biophysical instrumentation and techniques including biophysical spectroscopy, molecular structure determination, calorimetry, and mass spectrometry.

Precludes additional credit for BIOC 4002.

Prerequisite(s): BIOC 2200 or permission of the Institute.

Lectures three hours a week.

BIOC 3203 [0.5 credit]**Biochemical Pharmacology**

Biochemical principles of pharmacology, including receptor mechanisms, signal transduction, pharmacokinetics, and pharmacodynamics. Genome-wide association studies, pharmacogenomics, and personalized medicine will also be included.

Prerequisite(s): BIOC 2200 or BIOL 2200, or permission of the Institute.

Lectures three hours a week.

BIOC 3400 [0.5 credit]**Independent Research II**

Students carry out a laboratory research project under the supervision of faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to Honours students of third-year standing in a Biochemistry program with a GPA of 10.0 or higher in second year, and approval of the Director and Faculty supervisor.

Laboratory research for at least three hours a week over two terms.

BIOC 3999 [0.0 credit]**Co-operative Work Term**

Practical experience for students enrolled in the co-operative option. Students must receive a satisfactory evaluation from their work term employer; and present a written report describing their work term project. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Biochemistry co-operative option and permission of the Institute.

BIOC 4001 [0.5 credit]**Methods in Biochemistry**

Principles and applications of modern biochemical methodology, including ultracentrifugation, electrophoresis, ELISA, EMSA, experimental planning, ligand binding kinetics, fluorescence spectroscopy, affinity purification, and in vitro translation.

Includes: Experiential Learning Activity

Prerequisite(s): BIOC 3103 and BIOC 3104 or permission of the Institute.

Lectures and discussion two hours, laboratory four hours a week.

BIOC 4004 [0.5 credit]**Industrial Biochemistry**

The application of biochemistry to the production of biological compounds useful in nutrition, medicine, and the food and chemical industries. General strategies for efficient production of these compounds by controlling the activities of living cells or enzymes.

Prerequisite(s): BIOC 3101 and BIOC 3102 (BIOC 3102 may be taken concurrently), or permission of the Institute. Lecture three hours a week.

BIOC 4005 [0.5 credit]**Biochemical Regulation**

Regulation at the transcriptional, translational and metabolic level; regulation of cell and subcellular organelle function and other timely topics may be included.

Prerequisite(s): BIOC 3101 and BIOC 3102.

Lectures three hours a week.

BIOC 4007 [0.5 credit]**Membrane Biochemistry**

Biochemical and biophysical aspects of biomembrane structure and function. Topics may include: membrane lipids and proteins, lipid polymorphism, model membranes, liposomes, membrane biogenesis, the membrane cytoskeleton, membrane trafficking, membrane fusion, exocytosis and signal transduction across membranes.

Prerequisite(s): BIOL 2200 or BIOC 2200, or BIOC 3101 (which may be taken concurrently with BIOC 4007), or permission of the Institute.

Lectures two hours a week and workshop two hours a week.

BIOC 4008 [0.5 credit]**Computational Systems Biology**

Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.

Includes: Experiential Learning Activity

Also listed as COMP 4308.

Prerequisite(s): BIOC 3101 or permission of the Institute.

Lecture one and a half hours per week, workshop one and a half hours per week.

BIOC 4009 [0.5 credit]**Biochemistry of Disease**

The biochemical basis of disease including genetic and metabolic disorders such as cancer, neurological degenerative conditions, diabetes, stroke and microbial infections.

Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.

Lectures three hours a week.

BIOC 4200 [0.5 credit]**Immunology**

The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.

Also listed as BIOL 4200.

Prerequisite(s): BIOL 3201 or permission of the Institute.

Lectures three hours a week.

BIOC 4201 [0.5 credit]**Advanced Cell Culture and Tissue Engineering**

Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering.

Includes: Experiential Learning Activity

Also listed as BIOL 4201.

Prerequisite(s): BIOL 3201 or permission of the Institute.

Laboratory four hours per week, tutorial one hour a week.

BIOC 4202 [0.5 credit]**Mutagenesis and DNA Repair**

A mechanistic study of mutagenesis and DNA repair.

Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.

Also listed as BIOL 4202.

Prerequisite(s): BIOL 3104 and BIOL 2200/BIOC 2200, or permission of the Institute.

Lectures and tutorial three hours a week.

BIOC 4203 [0.5 credit]**Advanced Metabolism**

Structure, biochemical derivation and function of secondary metabolites such as toxins and antibiotics.

Examples from plant, fungal and animal systems.

Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.

Lectures three hours a week.

BIOC 4204 [0.5 credit]**Protein Biotechnology**

An advanced lecture, discussion and seminar course covering the theory, development and current techniques of protein and enzyme engineering. Topics to be discussed may also include applications in biotechnology, nanotechnology and new frontiers in basic and applied research.

Precludes additional credit for BIOC 4002.

Prerequisite(s): BIOC 3101 and BIOC 3202 (may be taken concurrently), or permission of the Institute.

Lectures two hours a week, workshop two hours a week.

BIOC 4708 [0.5 credit]**Principles of Toxicology**

Basic theorems of toxicology with examples of current research problems. Toxic risk is defined as the product of intensive hazard and extensive exposure. Each factor is assessed in scientific and social contexts and illustrated with many types of experimental material.

Prerequisite(s): BIOC 3101 and fourth-year standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as BIOL 6402, CHEM 5708, for which additional credit is precluded.

Lectures three hours a week.

BIOC 4901 [0.5 credit]**Selected Topics in Biochemistry**

Selected topics of current interest in biochemistry are offered upon approval by the Director in consultation with members of the Institute.

BIOC 4906 [1.0 credit]**Interdisciplinary Research Project**

Collaborative, interdisciplinary research project approved by the Director. Requires co-supervision, with at least one faculty member from the Institute of Biochemistry.

Evaluation is based on a written thesis and poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 4907 and BIOC 4908.

Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology, permission of the Institute.

BIOC 4907 [1.0 credit]**Honours Essay and Research Proposal**

An independent research study using library or computational resources. The candidate will prepare a critical review of a topic approved by a faculty adviser. Evaluation will be based on a written report and a poster presentation of the project.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 4906 [1.0] and BIOC 4908 [1.0].

Prerequisite(s): fourth-year standing in an Honours Biochemistry program and permission of the Institute.

BIOC 4908 [1.0 credit]**Research Project**

Students carry out a research project approved by the Director, under the supervision of a faculty member of the Institute, in either the Biology or Chemistry departments. Evaluation is based on a written thesis and poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 4906 and BIOC 4907.

Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, and eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology.

Biology

This section presents the requirements for programs in:

- Bioinformatics B.Sc. Honours
- Biology B.Sc. Honours
- Biology with Concentration in Biodiversity, Natural History, and Conservation Science B.Sc. Honours
- Biology with Concentration in Ecology, Evolution and Behaviour B.Sc. Honours
- Biology with Concentration in Health Science B.Sc. Honours
- Biology with Concentration in Molecular and Cellular Biology B.Sc. Honours
- Biology with Concentration in Physiology B.Sc. Honours
- Biology B.Sc. Major
- Biology B.Sc.
- Biology and Biotechnology B.Sc. Honours
- Biology and Earth Sciences B.Sc. Combined Honours
- Biology and Physics B.Sc. Combined Honours
- Neuroscience and Biology B.Sc. Combined Honours
- Biology B.A. Honours
- Biology B.A.
- Biology B.A. Combined Honours
- Biology and Humanities B.Hum. Combined Honours
- Minor in Biology

Program Requirements**Course Categories for Biology Programs**

The program descriptions below make use of the following course categories that are defined in the Bachelor of Science Regulations in this Calendar.

- Science Faculty Electives
- Advanced Science Faculty Electives
- Science Continuation
- Science Geography
- Science Psychology
- Approved Courses Outside the Faculties of Science and Engineering and Design
- Free Electives
- Restricted Courses: Students in the Biology B.Sc., Biology B.Sc. Major, and Biology B.Sc. Honours

programs (except students in the Biology B.A, Biology B.A. Honours and Biology B.A. Combined Honours programs) may use Technology, Society, Environment courses TSES 3001, TSES 3002, TSES 3500, TSES 4001, TSES 4002, TSES 4003, TSES 4005, TSES 4006, TSES 4007 to fulfill degree requirements, but only as free electives.

Bioinformatics

B.Sc. Honours (20.0 credits)

A. Credits included in the Major CGPA (12.5 credits)

1. 4.0 credits in: 4.0

BIOL 1103 [0.5] Foundations of Biology I

BIOL 1104 [0.5] Foundations of Biology II

BIOL 2104 [0.5] Introductory Genetics

BIOL 2200 [0.5] Cellular Biochemistry

BIOL 3104 [0.5] Molecular Genetics

BIOL 3008 [0.5] Bioinformatics

BIOL 4905 [1.0] Honours Workshop

or BIOC 4906 [1.0] Interdisciplinary Research Project

or BIOL 4907 [1.0] Honours Essay and Research Proposal

or BIOL 4908 [1.0] Honours Research Thesis

2. 0.5 credit from: 0.5

BIOL 2001 [0.5] Animals: Form and Function

BIOL 2002 [0.5] Plants: Form and Function

BIOL 2303 [0.5] Microbiology

BIOL 3102 [0.5] Mycology

BIOL 3305 [0.5] Human and Comparative Physiology

BIOL 3306 [0.5] Human Anatomy and Physiology

3. 3.5 credits from: 3.5

BIOC 2300 [0.5] Physical Biochemistry

BIOC 3101 [0.5] General Biochemistry I

BIOC 3102 [0.5] General Biochemistry II

BIOC 3202 [0.5] Biophysical Techniques and Applications

BIOC 4008 [0.5] Computational Systems Biology

BIOL 4104 [0.5] Evolutionary Genetics

BIOL 4106 [0.5] Advances in Molecular Biology

BIOC 4202 [0.5] Mutagenesis and DNA Repair

4. 1.0 credit in BIOL or BIOC or COMP or MATH or STAT at the 3000-level or higher 1.0

5. 0.5 credit from: 0.5

BIOL 3901 [0.5] Research Proposal

BIOL 4901 [0.5] Directed Special Studies

or 4000-level BIOL

6. 3.0 credits in 3.0

COMP 1005 [0.5] Introduction to Computer Science I

COMP 1006 [0.5] Introduction to Computer Science II

COMP 2401 [0.5] Introduction to Systems Programming

COMP 2402 [0.5] Abstract Data Types and Algorithms

COMP 2404 [0.5] Introduction to Software Engineering

COMP 2406 [0.5] Fundamentals of Web Applications

B. Credits not included in the Major CGPA (7.5)

7. 2.0 credits in: 2.0

CHEM 1001 [0.5] General Chemistry I

& CHEM 1002 [0.5] General Chemistry II

CHEM 2203 [0.5] Organic Chemistry I

& CHEM 2204 [0.5] Organic Chemistry II

8. 1.0 credit from: 1.0

PHYS 1007 [0.5] Elementary University Physics I

& PHYS 1008 [0.5] Elementary University Physics II

PHYS 1003 [0.5] Introductory Mechanics and

& PHYS 1004 [0.5] Thermodynamics
Introductory Electromagnetism and
Wave Motion

9. 2.0 credits in: 2.0

MATH 1007 [0.5] Elementary Calculus I

MATH 1107 [0.5] Linear Algebra I

STAT 2507 [0.5] Introduction to Statistical Modeling I

STAT 2509 [0.5] Introduction to Statistical Modeling
II

10. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000) 2.0

11. 0.5 credit in free electives. 0.5

Total Credits 20.0

Biology

B.Sc. Honours (20.0 credits)

A. Credits included in the Major CGPA (11.5 credits)

1. 3.0 credits in: 3.0

BIOL 1103 [0.5] Foundations of Biology I

BIOL 1104 [0.5] Foundations of Biology II

BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation

BIOL 2200 [0.5] Cellular Biochemistry

BIOL 4905 [1.0] Honours Workshop

or BIOL 4907 [1.0] Honours Essay and Research Proposal

or BIOL 4908 [1.0] Honours Research Thesis

2. 2.0 credits from: 2.0

BIOL 2001 [0.5] Animals: Form and Function

BIOL 2002 [0.5] Plants: Form and Function

BIOL 2104 [0.5] Introductory Genetics

BIOL 2303 [0.5] Microbiology

BIOL 2600 [0.5] Ecology

3. 0.5 credit from: 0.5

BIOL 3201 [0.5] Cell Biology

BIOL 3205 [0.5] Plant Biochemistry and Physiology

BIOL 3303 [0.5] Experimental Microbiology

BIOL 3305 [0.5] Human and Comparative Physiology

4. 1.0 credit in BIOL at the 2000-level or higher 1.0

5. 3.5 credits in BIOL or BIOC at the 3000-level or higher 3.5

6. 0.5 credit from 0.5

BIOL 3901 [0.5] Research Proposal

BIOL 4901 [0.5] Directed Special Studies

or 4000-level BIOL

7. 1.0 credit in Advanced Science Faculty Electives 1.0

B. Credits not included in the Major CGPA (8.5 credits)

8. 1.0 credit in 1.0

CHEM 1001 [0.5] General Chemistry I

& CHEM 1002 [0.5] General Chemistry II

9. 0.5 credit in: 0.5

MATH 1007 [0.5] Elementary Calculus I

10. 1.0 credit from:	1.0
COMP 1005 [0.5] Introduction to Computer Science I	
COMP 1006 [0.5] Introduction to Computer Science II	
MATH 1107 [0.5] Linear Algebra I	
PHYS 1007 [0.5] Elementary University Physics I or PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5] Elementary University Physics II or PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
11. 1.0 credit in Science Faculty Electives	1.0
12. 2.0 credits in Science Continuation (not in BIOL)	2.0
13. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
14. 1.0 credit in free electives.	1.0
Total Credits	20.0

Biology with Concentration in Biodiversity, Natural History, and Conservation Science B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 2.5 credits in:	2.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation	
BIOL 4905 [1.0] Honours Workshop or BIOL 4907 [1.0] Honours Essay and Research Proposal or BIOL 4908 [1.0] Honours Research Thesis	
2. 2.5 credits in:	2.5
BIOL 2001 [0.5] Animals: Form and Function	
BIOL 2002 [0.5] Plants: Form and Function	
BIOL 2104 [0.5] Introductory Genetics	
BIOL 2200 [0.5] Cellular Biochemistry	
BIOL 2600 [0.5] Ecology	
3. 0.5 credit from:	0.5
BIOL 3201 [0.5] Cell Biology	
BIOL 3205 [0.5] Plant Biochemistry and Physiology	
BIOL 3303 [0.5] Experimental Microbiology	
BIOL 3305 [0.5] Human and Comparative Physiology	
BIOL 4207 [0.5] Advanced Embryology & Developmental Biology	
4. 3.0 credits in:	3.0
BIOL 2903 [0.5] Natural History and Ecology of Ontario	
BIOL 3602 [0.5] Conservation Biology	
BIOL 3604 [0.5] Statistics for Biologists	
BIOL 3608 [0.5] Principles of Biogeography	
BIOL 3609 [0.5] Evolutionary Concepts or BIOL 3611 [0.5] Evolutionary Ecology	
BIOL 4104 [0.5] Evolutionary Genetics	
5. 1.0 credit from:	1.0
BIOL 2303 [0.5] Microbiology	
BIOL 3004 [0.5] Insect Diversity	
BIOL 3102 [0.5] Mycology	

BIOL 3202 [0.5] Principles of Developmental Biology	
BIOL 3303 [0.5] Experimental Microbiology	
BIOL 3601 [0.5] Ecosystems and Environmental Change	
BIOL 3605 [0.5] Field Course I	
BIOL 3801 [0.5] Plants and Herbivores	
BIOL 3802 [0.5] Animal Behaviour	
6. 1.5 credits from:	1.5
BIOL 4103 [0.5] Population Genetics	
BIOL 4203 [0.5] Evolution of Sex	
BIOL 4207 [0.5] Advanced Embryology & Developmental Biology	
BIOL 4318 [0.5] Adaptations to Extreme Environments	
BIOL 4500 [0.5] The Biology of Birds	
BIOL 4501 [0.5] The Taxonomy of Birds	
BIOL 4502 [0.5] Herpetology	
BIOL 4503 [0.5] Fish Ecology, Conservation and Management	
BIOL 4504 [0.5] Ecology of Freshwater Invertebrates	
BIOL 4505 [0.5] Coral Reefs	
BIOL 4506 [0.5] Cactus Biology	
BIOL 4602 [0.5] Evolutionary Applications across Disciplines: From Medicine to Conservation	
BIOL 4603 [0.5] Insect Evolution and Biology	
BIOL 4604 [0.5] Landscape Ecology	
7. 0.5 credit in:	0.5
BIOL 3901 [0.5] Research Proposal or BIOL 4901 [0.5] Directed Special Studies or BIOL at 4000-level or above	
B. Credits Not Included in the Major CGPA (8.5 credits)	
8. 1.0 credit in:	1.0
CHEM 1001 [0.5] General Chemistry I	
CHEM 1002 [0.5] General Chemistry II	
9. 0.5 credit in:	0.5
MATH 1007 [0.5] Elementary Calculus I	
10. 1.0 credit from:	1.0
COMP 1005 [0.5] Introduction to Computer Science I	
COMP 1006 [0.5] Introduction to Computer Science II	
MATH 1107 [0.5] Linear Algebra I	
PHYS 1007 [0.5] Elementary University Physics I or PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5] Elementary University Physics II or PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
11. 1.0 credit in Science Faculty electives	1.0
12. 2.0 credits in Science Continuation courses (not in BIOL)	2.0

Students are encouraged to consider the following courses as options:

ERTH 2312 [0.5] Paleontology	
ENSC 3106 [0.5] Aquatic Science and Management	

13. 2.0 credits in Approved Courses outside the Faculties of Science and Engineering and Design (may include NSCI 1000) 2.0

Students are encouraged to consider the following courses as options:

ENST 2000 [0.5]	Environmental Justice
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions
ENST 3022 [0.5]	Environmental and Natural Resources
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing

14. 1.0 credit in free electives 1.0

Total Credits 20.0

Biology with Concentration in Ecology, Evolution and Behaviour B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 2.5 credits in: 2.5

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation
BIOL 4905 [1.0] or BIOL 4907 [1.0](Honours Essay and Research Proposal or BIOL 4908 [1.0](Honours Research Thesis	

2. 2.5 credits in: 2.5

BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

3. 0.5 credit from: 0.5

BIOL 3201 [0.5]	Cell Biology
BIOL 3205 [0.5]	Plant Biochemistry and Physiology
BIOL 3303 [0.5]	Experimental Microbiology
BIOL 3305 [0.5]	Human and Comparative Physiology

4. 1.0 credit from: 1.0

BIOL 3609 [0.5]	Evolutionary Concepts
BIOL 3611 [0.5]	Evolutionary Ecology
BIOL 3802 [0.5]	Animal Behaviour

5. 2.0 credits from: 2.0

BIOL 3004 [0.5]	Insect Diversity
BIOL 3104 [0.5]	Molecular Genetics
BIOL 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
BIOL 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
BIOL 3202 [0.5]	Principles of Developmental Biology
BIOL 3601 [0.5]	Ecosystems and Environmental Change
BIOL 3602 [0.5]	Conservation Biology
BIOL 3604 [0.5]	Statistics for Biologists
BIOL 3605 [0.5]	Field Course I
BIOL 3608 [0.5]	Principles of Biogeography
BIOL 3609 [0.5]	Evolutionary Concepts

BIOL 3611 [0.5]	Evolutionary Ecology
BIOL 3612 [0.5]	Computational Methods in Ecology and Evolution
BIOL 3801 [0.5]	Plants and Herbivores
BIOL 3802 [0.5]	Animal Behaviour
BIOL 3804 [0.5]	Social Evolution

6. 2.0 credits from: 2.0

BIOL 4102 [0.5]	Molecular Ecology
BIOL 4103 [0.5]	Population Genetics
BIOL 4104 [0.5]	Evolutionary Genetics
BIOL 4203 [0.5]	Evolution of Sex
BIOL 4317 [0.5]	Neuroethology: The Neural Basis of Animal Behaviour
BIOL 4318 [0.5]	Adaptations to Extreme Environments
BIOL 4500 [0.5]	The Biology of Birds
BIOL 4501 [0.5]	The Taxonomy of Birds
BIOL 4502 [0.5]	Herpetology
BIOL 4503 [0.5]	Fish Ecology, Conservation and Management
BIOL 4504 [0.5]	Ecology of Freshwater Invertebrates
BIOL 4505 [0.5]	Coral Reefs
BIOL 4506 [0.5]	Cactus Biology
BIOL 4507 [0.5]	Ecological Parasitology
BIOL 4602 [0.5]	Evolutionary Applications across Disciplines: From Medicine to Conservation
BIOL 4604 [0.5]	Landscape Ecology
BIOL 4802 [0.5]	Advanced Animal Behaviour

7. 0.5 credit in BIOL at the 2000 level or higher 0.5

8. 0.5 credit from 0.5

BIOL 3901 [0.5]	Research Proposal
or BIOL 4901 [0.5]	Directed Special Studies
or 4000-level BIOL	

B. Credits Not Included in the Major CGPA (8.5 credits)

9. 1.0 credit in: 1.0

CHEM 1001 [0.5]	General Chemistry I
& CHEM 1002 [0.5]	General Chemistry II

10. 0.5 credit in: 0.5

MATH 1007 [0.5]	Elementary Calculus I
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11. 1.0 credit from: 1.0

COMP 1005 [0.5]	Introduction to Computer Science I
COMP 1006 [0.5]	Introduction to Computer Science II
MATH 1107 [0.5]	Linear Algebra I
PHYS 1007 [0.5]	Elementary University Physics I
or PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1008 [0.5]	Elementary University Physics II
or PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
STAT 2507 [0.5]	Introduction to Statistical Modeling I

12. 1.0 credit in Science Faculty Electives 1.0

13. 2.0 credits in Science Continuation courses (not in BIOL) 2.0

14. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000) 2.0

15. 1.0 credit in free electives.	1.0
Total Credits	20.0

Biology with Concentration in Health Science B.Sc. Honours (20.0 credits)

A. Credits included in the Major CGPA (11.5 credits)

1. 2.5 credits in:	2.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation	
BIOL 4905 [1.0] Honours Workshop or BIOL 4907 [1.0] Honours Essay and Research Proposal or BIOL 4908 [1.0] Honours Research Thesis	
2. 2.0 credits in:	2.0
BIOL 2001 [0.5] Animals: Form and Function	
BIOL 2104 [0.5] Introductory Genetics	
BIOL 2200 [0.5] Cellular Biochemistry	
BIOL 2303 [0.5] Microbiology	
3. 1.0 credit in:	1.0
BIOL 3305 [0.5] Human and Comparative Physiology	
BIOL 3307 [0.5] Advanced Human Anatomy and Physiology	
4. 1.0 credit in:	1.0
BIOC 3101 [0.5] General Biochemistry I	
BIOC 3102 [0.5] General Biochemistry II	
5. 1.0 credit from:	1.0
BIOL 3008 [0.5] Bioinformatics	
BIOL 3104 [0.5] Molecular Genetics	
BIOL 3201 [0.5] Cell Biology	
BIOL 3202 [0.5] Principles of Developmental Biology	
BIOL 3303 [0.5] Experimental Microbiology	
BIOL 3501 [0.5] Biomechanics	
BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering	
BIOL 4206 [0.5] Human Genetics	
BIOL 4207 [0.5] Advanced Embryology & Developmental Biology	
BIOL 4303 [0.5] Advances in Microbiology	
BIOL 4318 [0.5] Adaptations to Extreme Environments	
6. 1.0 credit from:	1.0
BIOC 4009 [0.5] Biochemistry of Disease	
BIOC 4708 [0.5] Principles of Toxicology	
BIOL 4106 [0.5] Advances in Molecular Biology	
BIOL 4200 [0.5] Immunology	
BIOL 4202 [0.5] Mutagenesis and DNA Repair	
BIOL 4306 [0.5] Animal Neurophysiology	
BIOL 4309 [0.5] Studies in Human Performance	
BIOL 4319 [0.5] Studies in Exercise Physiology	
7. 1.0 credit from BIOL or BIOC at the 3000-level or higher	1.0
8. 0.5 credit from:	0.5
BIOL 3901 [0.5] Research Proposal	
BIOL 4901 [0.5] Directed Special Studies or 4000-level BIOL	

9. 1.0 credit from:	1.0
NEUR 2201 [0.5] Cellular and Molecular Neuroscience	
NEUR 2202 [0.5] Neurodevelopment and Plasticity	
NEUR 3204 [0.5] Neuropharmacology	
PSYC 2301 [0.5] Introduction to Health Psychology	
10. 0.5 credit from:	0.5
PHIL 2408 [0.5] Bioethics	
GEOG 3206 [0.5] Health, Environment, and Society	
ANTH 3310 [0.5] Studies in Medical Anthropology	
SOCI 3050 [0.5] Studies in the Sociology of Health	
SOCI 3056 [0.5] Women and Health	
B. Credits not included in the Major CGPA (8.5 credits)	
11. 2.0 credits from:	2.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 2203 [0.5] Organic Chemistry I & CHEM 2204 [0.5] Organic Chemistry II	
CHEM 2207 [0.5] Introduction to Organic Chemistry I & CHEM 2208 [0.5] Introduction to Organic Chemistry II	
12. 0.5 credit in:	0.5
MATH 1007 [0.5] Elementary Calculus I	
13. 1.0 credit from:	1.0
COMP 1005 [0.5] Introduction to Computer Science I	
COMP 1006 [0.5] Introduction to Computer Science II	
MATH 1107 [0.5] Linear Algebra I	
PHYS 1007 [0.5] Elementary University Physics I or PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5] Elementary University Physics II or PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
14. 1.0 credit in:	1.0
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	
15. 1.0 credit in Science Faculty Electives	1.0
16. 1.0 credit in Science Continuation courses (not in BIOL)	1.0
17. 1.0 credit in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	1.0
18. 1.0 credit in free electives.	1.0
Total Credits	20.0

Biology with Concentration in Molecular and Cellular Biology B.Sc. Honours (20.0 credits)

A. Credits included in the Major CGPA (11.5 credits)

1. 2.5 credits in:	2.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation	
BIOL 4905 [1.0] Honours Workshop or BIOL 4907 [1.0] Honours Essay and Research Proposal or BIOL 4908 [1.0] Honours Research Thesis	
2. 2.5 credits in:	2.5

BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
BIOL 2303 [0.5]	Microbiology	
3. 0.5 credit from:		0.5
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3303 [0.5]	Experimental Microbiology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
4. 1.0 credit in:		1.0
BIOC 3101 [0.5]	General Biochemistry I	
BIOC 3102 [0.5]	General Biochemistry II	
5. 1.0 credit in:		1.0
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3201 [0.5]	Cell Biology	
6. 2.0 credits from:		2.0
BIOL 3008 [0.5]	Bioinformatics	
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 4008 [0.5]	Molecular Plant Development	
BIOL 4106 [0.5]	Advances in Molecular Biology	
BIOL 4109 [0.5]	Laboratory Techniques in Molecular Genetics	
BIOL 4200 [0.5]	Immunology	
BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
BIOL 4207 [0.5]	Advanced Embryology & Developmental Biology	
BIOL 4303 [0.5]	Advances in Microbiology	
7. 0.5 credit in BIOL or BIOC at the 2000 level or higher		0.5
8. 1.0 credit in BIOL or BIOC at the 3000 level or higher		1.0
9. 0.5 credit from:		0.5
BIOL 3901 [0.5]	Research Proposal	
BIOL 4901 [0.5]	Directed Special Studies	
	or 4000-level BIOL	
B. Credits Not Included in the Major CGPA (8.5 credits)		
10. 2.0 credits in:		2.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2203 [0.5]	Organic Chemistry I	
& CHEM 2204 [0.5]	Organic Chemistry II	
11. 0.5 credit in:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
12. 1.0 credit from:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
MATH 1107 [0.5]	Linear Algebra I	
PHYS 1007 [0.5]	Elementary University Physics I	
or PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5]	Elementary University Physics II	
or PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
13. 1.0 credit in Science Faculty Electives		1.0

14. 1.0 credit in Science Continuation courses (not in BIOL)		1.0
15. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)		2.0
16. 1.0 credit in free electives.		1.0
Total Credits		20.0

Biology with Concentration in Physiology B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)		
1. 2.5 credits in:		2.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
BIOL 4905 [1.0]	Honours Workshop	
or BIOL 4907 [1.0]	Honours Essay and Research Proposal	
or BIOL 4908 [1.0]	Honours Research Thesis	
2. 2.0 credits in:		2.0
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
3. 1.5 credits in:		1.5
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
4. 1.0 credit in:		1.0
BIOC 3101 [0.5]	General Biochemistry I	
BIOC 3102 [0.5]	General Biochemistry II	
5. 2.0 credits from:		2.0
BIOC 4203 [0.5]	Advanced Metabolism	
BIOL 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds	
BIOL 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians	
BIOL 3201 [0.5]	Cell Biology	
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 3501 [0.5]	Biomechanics	
BIOL 3802 [0.5]	Animal Behaviour	
BIOL 4008 [0.5]	Molecular Plant Development	
BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering	
BIOL 4209 [0.5]	Advanced Plant Physiology	
BIOL 4306 [0.5]	Animal Neurophysiology	
BIOL 4309 [0.5]	Studies in Human Performance	
BIOL 4317 [0.5]	Neuroethology: The Neural Basis of Animal Behaviour	
BIOL 4318 [0.5]	Adaptations to Extreme Environments	
BIOL 4319 [0.5]	Studies in Exercise Physiology	
6. 1.5 credit in BIOL at the 2000-level or higher		1.5
7. 0.5 credit in BIOL or BIOC at the 3000-level or higher		0.5
8. 0.5 credit from:		0.5
BIOL 3901 [0.5]	Research Proposal	

BIOL 4901 [0.5]	Directed Special Studies	
4000-level BIOL		
B. Credits not included in the Major CGPA (8.5 credits)		
9. 2.0 credits from:		2.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2203 [0.5]	Organic Chemistry I	
& CHEM 2204 [0.5]	Organic Chemistry II (or)	
CHEM 2207 [0.5]	Introduction to Organic Chemistry I	
& CHEM 2208 [0.5]	Introduction to Organic Chemistry II	
10. 0.5 credit in:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
11. 1.0 credit from:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
or PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5]	Elementary University Physics II	
or PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
MATH 1107 [0.5]	Linear Algebra I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
12. 1.0 credit in	Science Faculty electives	1.0
13. 1.0 credit in	Science Continuation courses (not in BIOL)	1.0
14. 2.0 credits in	Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
15. 1.0 credit in	free electives	1.0
Total Credits		20.0

Biology

B.Sc. Major (20.0 credits)

A. Credits included in the Major CGPA (9.5 credits)

1. 1.5 credit in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
2. 2.5 credits from:		2.5
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
or BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
or BIOL 2201 [0.5]	Cell Biology and Biochemistry	
BIOL 2303 [0.5]	Microbiology	
BIOL 2600 [0.5]	Ecology	
3. 0.5 credit from:		0.5
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3306 [0.5]	Human Anatomy and Physiology	
4. 3.0 credits in	BIOL at the 3000-level or higher	3.0
5. 2.0 credits in	Advanced Science Faculty electives	2.0

B. Credits Not Included in the Major CGPA (10.5 credits)

6. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	

CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II (See Note 2, below)	
7. 0.5 credit in:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
8. 1.0 credit from:		1.0
MATH 1107 [0.5]	Linear Algebra I	
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
PHYS 1007 [0.5]	Elementary University Physics I	
or PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5]	Elementary University Physics II	
or PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
9. 1.0 credit in	Science Faculty Electives	1.0
10. 2.0 credits in	Advanced Science Faculty Electives	2.0
11. 2.0 credits in	Science Continuation courses (not in BIOL)	2.0
12. 2.0 credits in	Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
13. 1.0 credit in	free electives.	1.0
Total Credits		20.0

Biology

B.Sc. (15.0 credits)

Note: some advanced Biology courses with laboratory components will not be available to students enrolling in the B.Sc. program.

A. Credits included in the Major CGPA (6.5 credits)

1. 1.5 credit in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
2. 2.0 credits from:		2.0
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
BIOL 2303 [0.5]	Microbiology	
BIOL 2600 [0.5]	Ecology	
3. 0.5 credit in:		0.5
BIOL 3306 [0.5]	Human Anatomy and Physiology	
4. 2.5 credits from	BIOL at the 2000-level and 3000-level or higher	2.5

B. Credits Not Included in the Major CGPA (8.5 credits)

5. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II (See Note 2, below)	
6. 0.5 credit in:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
7. 1.0 credit from:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	

COMP 1006 [0.5]	Introduction to Computer Science II	
MATH 1107 [0.5]	Linear Algebra I	
PHYS 1007 [0.5]	Elementary University Physics I	
or PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5]	Elementary University Physics II	
or PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
8. 2.0 credits in	Science Continuation (not in BIOL)	2.0
9. 1.0 credit in	Science Faculty Electives	1.0
10. 2.0 credits in	Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
11. 1.0 credit in	free electives.	1.0
Total Credits		15.0

Biology and Biotechnology B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13 credits)

1. 6.5 credits in:		6.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
BIOL 2301 [0.5]	Biotechnology I	
BIOL 2303 [0.5]	Microbiology	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3201 [0.5]	Cell Biology	
BIOL 3301 [0.5]	Biotechnology II	
BIOL 4301 [0.5]	Current Topics in Biotechnology	
2. 1.5 credit in:		1.5
BUSI 2800 [0.5]	Entrepreneurship	
BIOC 3101 [0.5]	General Biochemistry I	
BIOC 3102 [0.5]	General Biochemistry II	
3. 4.0 credits from:		4.0
BIOC 2300 [0.5]	Physical Biochemistry	
or CHEM 2103 [0.5]	Physical Chemistry I	
BIOL 3008 [0.5]	Bioinformatics	
BIOL 3103 [0.5]	Practical Biochemistry I	
BIOL 3104 [0.5]	Practical Biochemistry II	
BIOL 3202 [0.5]	Biophysical Techniques and Applications	
BIOL 3004 [0.5]	Insect Diversity	
BIOL 3102 [0.5]	Mycology	
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3303 [0.5]	Experimental Microbiology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
BIOL 3501 [0.5]	Biomechanics	
BIOL 3901 [0.5]	Research Proposal	
CHEM 3700 [0.5]	Industrial Applications of Chemistry	
CHEM 3800 [0.5]	The Chemistry of Environmental Pollutants	

FOOD 3005 [0.5]	Food Microbiology	
BIOC 4001 [0.5]	Methods in Biochemistry	
BIOC 4004 [0.5]	Industrial Biochemistry	
BIOC 4005 [0.5]	Biochemical Regulation	
BIOC 4007 [0.5]	Membrane Biochemistry	
BIOC 4008 [0.5]	Computational Systems Biology	
BIOC 4009 [0.5]	Biochemistry of Disease	
BIOC 4203 [0.5]	Advanced Metabolism	
BIOC 4204 [0.5]	Protein Biotechnology	
BIOC 4708 [0.5]	Principles of Toxicology	
BIOL 4106 [0.5]	Advances in Molecular Biology	
BIOL 4109 [0.5]	Laboratory Techniques in Molecular Genetics	
BIOL 4200 [0.5]	Immunology	
BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
BIOL 4206 [0.5]	Human Genetics	
BIOL 4304 [0.5]	Forensic Biology	
BIOL 4901 [0.5]	Directed Special Studies	
TSES 4001 [0.5]	Technology and Society: Risk	
TSES 4002 [0.5]	Technology and Society: Forecasting	
4. 1.0 credit in:		1.0
BIOL 4905 [1.0]	Honours Workshop	
or BIOL 4907 [1.0]	(Honours Essay and Research Proposal	
or BIOL 4908 [1.0]	(Honours Research Thesis	
B. Credits Not Included in the Major CGPA (7.0 credits)		
5. 2.0 credits in:		2.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2203 [0.5]	Organic Chemistry I	
& CHEM 2204 [0.5]	Organic Chemistry II (See Note, below)	
6. 0.5 credit in:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
7. 1.5 credits from:		1.5
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
MATH 1107 [0.5]	Linear Algebra I	
PHYS 1007 [0.5]	Elementary University Physics I	
or PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5]	Elementary University Physics II	
or PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
8. 2.0 credits in	Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
9. 1.0 credit in	free electives.	1.0
Total Credits		20.0

Biology and Earth Sciences

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.5 credits in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	

BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2001 [0.5]	Animals: Form and Function	
2. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
3. 0.5 credit from:		0.5
BIOL 2600 [0.5]	Ecology	
BIOL 3605 [0.5]	Field Course I	
4. 3.5 credits in BIOL or BIOC, with at least 1.0 credit at the 3000-level and 1.0 credit at the 4000-level		3.5
5. 3.0 credits in:		3.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2312 [0.5]	Paleontology	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds	
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians	
ERTH 3113 [0.5]	Geology of Human Origins	
6. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	
7. 1.0 credit in EARTH at the 4000-level		1.0
8. 1.0 credit from:		1.0
BIOL 4905 [1.0]	Honours Workshop	
BIOL 4907 [1.0]	Honours Essay and Research Proposal	
BIOL 4908 [1.0]	Honours Research Thesis	
ERTH 4908 [1.0]	Honours Thesis	
ERTH 4909 [0.5]	Research in Earth Sciences (and 0.5 credit in EARTH at the 4000-level)	
B. Credits Not Included in the Major CGPA (8.0 credits)		
9. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
10. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
11. 1.0 credit in:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
12. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
13. 0.5 credit in:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
14. 1.0 credit in Science Continuation courses		1.0
15. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)		2.0
16. 1.0 credit in free electives		1.0
Total Credits		20.0

Biology and Physics

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 1.0 credit from:		1.0
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PHYS 1001 [0.5]	Foundations of Physics I	
& PHYS 1002 [0.5]	Foundations of Physics II (recommended)	
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
& PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II (with an average grade of B- or higher)	
2. 3.5 credits in:		3.5
PHYS 2604 [0.5]	Modern Physics I	
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2305 [0.5]	Electricity and Magnetism	
PHYS 2401 [0.5]	Thermal Physics	
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3207 [0.5]	Topics in Biophysics	
PHYS 3701 [0.5]	Elements of Quantum Mechanics	
3. 1.0 credit from:		1.0
PHYS 3308 [0.5]	Electromagnetism	
PHYS 3606 [0.5]	Modern Physics II	
PHYS 3802 [0.5]	Advanced Dynamics	
4. 1.0 credit from:		1.0
PHYS 3308 [0.5]	Electromagnetism	
PHYS 3606 [0.5]	Modern Physics II	
PHYS 3802 [0.5]	Advanced Dynamics	
PHYS 3807 [0.5]	Mathematical Physics I	
PHYS 4203 [0.5]	Physical Applications of Fourier Analysis	
PHYS 4409 [0.5]	Thermodynamics and Statistical Physics	
PHYS 4707 [0.5]	Introduction to Quantum Mechanics I	
5. 4.0 credits from:		4.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2200 [0.5]	Cellular Biochemistry	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 3201 [0.5]	Cell Biology	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3305 [0.5]	Human and Comparative Physiology	
6. 1.0 credit from:		1.0
BIOL 3501 [0.5]	Biomechanics	
BIOL 4106 [0.5]	Advances in Molecular Biology	
BIOL 4109 [0.5]	Laboratory Techniques in Molecular Genetics	
BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
BIOL 4301 [0.5]	Current Topics in Biotechnology	
BIOL 4306 [0.5]	Animal Neurophysiology	
BIOL 4309 [0.5]	Studies in Human Performance	
BIOL 4319 [0.5]	Studies in Exercise Physiology	

7. 1.0 credit from:	1.0
BIOL 4905 [1.0] Honours Workshop	
BIOL 4907 [1.0] Honours Essay and Research Proposal	
BIOL 4908 [1.0] Honours Research Thesis	
PHYS 4909 [1.0] Fourth-Year Project	
PHYS 4907 plus 0.5 credit 4000-level PHYS	
PHYS 4908 plus 0.5 credit 4000-level PHYS	
B. Credits Not Included in the Major CGPA (7.5 credits)	
8. 1.0 credit in:	1.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
9. 1.5 credits in:	1.5
MATH 1004 [0.5] Calculus for Engineering or Physics	
MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5] Linear Algebra for Engineering or Science	
10. 2.0 credits in:	2.0
STAT 2507 [0.5] Introduction to Statistical Modeling I	
MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics	
MATH 3705 [0.5] Mathematical Methods I	
MATH 3800 [0.5] Mathematical Modeling and Computational Methods	
11. 0.5 credit in:	0.5
COMP 1005 [0.5] Introduction to Computer Science I	
12. 2.0 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
13. 0.5 credit in free electives	0.5
Total Credits	20.0

Neuroscience and Biology

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (14.5 credits)

1. 5.5 credits in:	5.5
NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease	
NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease	
NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience	
NEUR 2002 [0.5] Introduction to Statistics in Neuroscience	
NEUR 2201 [0.5] Cellular and Molecular Neuroscience	
NEUR 2202 [0.5] Neurodevelopment and Plasticity	
NEUR 3001 [0.5] Data Analysis in Neuroscience I	
NEUR 3002 [0.5] Data Analysis in Neuroscience II	
NEUR 3204 [0.5] Neuropharmacology	
NEUR 3206 [0.5] Sensory and Motor Neuroscience	
NEUR 3207 [0.5] Systems Neuroscience	
2. 3.0 credits in:	3.0
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 2001 [0.5] Animals: Form and Function	
BIOL 2104 [0.5] Introductory Genetics	
BIOL 2200 [0.5] Cellular Biochemistry	

BIOL 3305 [0.5] Human and Comparative Physiology	
3. 1.5 credits in BIOL or BIOC at the 3000 level or above	1.5
4. 1.0 credit from:	1.0
NEUR 3301 [0.5] Genetics of Mental Health	
NEUR 3303 [0.5] The Neuroscience of Consciousness	
NEUR 3304 [0.5] Hormones and Behaviour	
NEUR 3401 [0.5] Environmental Toxins and Mental Health	
NEUR 3402 [0.5] Impact of Lifestyle and Social Interactions on Mental Health	
NEUR 3403 [0.5] Stress and Mental Health	
NEUR 3501 [0.5] Neurodegeneration and Aging	
NEUR 3502 [0.5] Neurodevelopmental Determinants of Mental Health	
NEUR 4301 [0.5] Neurobiology of Energy Homeostasis	
NEUR 4302 [0.5] Sex and the Brain	
NEUR 4303 [0.5] Indigenous Health & Mental Health	
NEUR 4305 [0.5] Immune-Brain Interactions	
NEUR 4306 [0.5] The Neural Basis of Addiction	
NEUR 4600 [0.5] Advanced Lab in Neuroanatomy	
5. 2.0 credits from:	2.0
BIOC 4007 [0.5] Membrane Biochemistry	
BIOL 2600 [0.5] Ecology	
BIOL 2301 [0.5] Biotechnology I	
BIOL 2303 [0.5] Microbiology	
BIOL 3307 [0.5] Advanced Human Anatomy and Physiology	
BIOL 3605 [0.5] Field Course I	
BIOL 3609 [0.5] Evolutionary Concepts	
BIOL 3802 [0.5] Animal Behaviour	
BIOL 3804 [0.5] Social Evolution	
BIOL 4306 [0.5] Animal Neurophysiology	
BIOL 4317 [0.5] Neuroethology: The Neural Basis of Animal Behaviour	
BIOL 4802 [0.5] Advanced Animal Behaviour	
CHEM 2204 [0.5] Organic Chemistry II	
6. 0.5 credit from:	0.5
NEUR 4200 [0.5] Seminar on Current Advances in Neuroscience	
NEUR 4202 [0.5] Seminar on Current Research in Neuroscience and Psychiatric Disease	
NEUR 4203 [0.5] Seminar on Current Research in Neuroscience and Clinical Neurology	
7. 1.0 credit from:	1.0
NEUR 4905 [1.0] Honours Workshop	
NEUR 4907 [1.0] Honours Essay and Research Proposal	
NEUR 4908 [1.0] Honours Research Thesis	
BIOL 4905 [1.0] Honours Workshop	
BIOL 4907 [1.0] Honours Essay and Research Proposal	
BIOL 4908 [1.0] Honours Research Thesis	
B. Credits not included in the Major CGPA (5.5 credits)	
8. 1.0 credit in:	1.0

MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
9. 1.5 credits in:		1.5
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2203 [0.5]	Organic Chemistry I	
10. 1.0 credit in:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
11. 2.0 credits in	approved courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
Total Credits		20.0

Biology

B.A. Honours (20.0 credits)

A. Credits included in the Major CGPA (8.0 credits)

1. 1.5 credit in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
2. 2.5 credits from:		2.5
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
or BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
or BIOL 2201 [0.5]	Cell Biology and Biochemistry	
BIOL 2303 [0.5]	Microbiology	
BIOL 2600 [0.5]	Ecology	
3. 0.5 credit from:		0.5
BIOL 3205 [0.5]	Plant Biochemistry and Physiology	
BIOL 3303 [0.5]	Experimental Microbiology	
BIOL 3305 [0.5]	Human and Comparative Physiology	
BIOL 3306 [0.5]	Human Anatomy and Physiology	
4. 1.5 credit in BIOL	at the 3000-level or higher	1.5
5. 1.0 credits in BIOL		1.0
6. 1.0 credit from:		1.0
BIOL 4905 [1.0]	Honours Workshop	
or BIOL 4907 [1.0]	Honours Essay and Research Proposal	
or BIOL 4908 [1.0]	Honours Research Thesis	

B. Credits not included in the Major CGPA (12.0 credits)

7. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
8. 1.0 credit in	Science Faculty Electives at the 2000-level or higher, not in BIOL	1.0
9. 1.0 credit in	Science Faculty Electives not in BIOL	1.0
10. 2.0 credits in	approved courses at the 2000 level outside of the faculties of Science and Engineering and Design	2.0
11. 4.0 credits in	approved courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)	4.0

12. 1.0 credit at	the 3000- or 4000-level	1.0
13. 2.0 credits in	free electives.	2.0
Total Credits		20.0

Biology

B.A. (15.0 credits)

Note: some advanced Biology courses with laboratory components will not be available to students enrolling in the B.A. program.

A. Credits included in the Major CGPA (6.0 credits)

1. 1.5 credit in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
2. 2.0 credits from:		2.0
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
BIOL 2303 [0.5]	Microbiology	
BIOL 2600 [0.5]	Ecology	
3. 2.5 credits in BIOL		2.5
B. Credits not included in the Major CGPA (9.0 credits)		
4. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
5. 1.0 credit in	Science Faculty Electives, not in BIOL	1.0
6. 4.0 credits in	approved courses outside of the faculties of Science and Engineering and Design (but may include NSCI 1000)	4.0
7. 1.0 credit at	the 2000-level or higher	1.0
8. 2.0 credits in	free electives.	2.0
Total Credits		15.0

Biology

B.A. Combined Honours (20.0 credits)

A. Credits included in the Biology Major CGPA (7.0 credits)

1. 1.5 credit in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
2. 2.5 credits from:		2.5
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
or BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
or BIOL 2201 [0.5]	Cell Biology and Biochemistry	
BIOL 2303 [0.5]	Microbiology	
BIOL 2600 [0.5]	Ecology	
3. 1.0 credit in BIOL	at the 3000-level or higher	1.0
4. 1.0 credit from:		1.0
BIOL 4905 [1.0]	Honours Workshop	

or BIOL 4907 [1.0] Honours Essay and Research Proposal or BIOL 4908 [1.0] Honours Research Thesis or equivalent from the other Honours department	
5. 1.0 credits from BIOL	1.0
B. Additional Requirements (13.0 credits)	
6. 1.0 credit from:	1.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II	
7. 1.0 credit in Science Faculty Electives, not in BIOL, at the 2000-level or higher	1.0
8. 1.0 credit in Science Faculty Electives, not in BIOL	1.0
9. 7.0 credits in approved courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000), to include the requirements for the other discipline	7.0
10. 3.0 credits in free electives.	3.0
Total Credits	20.0

Biology and Humanities

B.Hum. Combined Honours (20.0 credits)

A. Credits Included in the Humanities CGPA:

1. 4.0 credits in Humanities Core:	4.0
HUMS 1000 [1.0] Myth and Symbol	
HUMS 2000 [1.0] Reason and Revelation	
HUMS 3000 [1.0] Culture and Imagination	
HUMS 4000 [1.0] Politics, Modernity and the Common Good	
2. 1.5 credits in:	1.5
HUMS 1200 [0.5] Humanities and Classical Civilisation	
HUMS 3200 [1.0] European Literature	
3. 1.0 credit in:	1.0
HUMS 1005 [0.5] Early Human Cultures	
RELI 1731 [0.5] Varieties of Religious Experience or 1.0 credit in an approved Beginner's-level language.	
4. 2.0 credits in:	2.0
HUMS 2101 [0.5] Art from Antiquity to the Medieval World	
HUMS 2102 [0.5] Modern European Art 1527-2000	
HUMS 3102 [0.5] Western Music 1000-1850	
HUMS 3103 [0.5] Western Music 1850-2000 (See Note, below)	
5. 1.5 credits in:	1.5
RELI 2710 [1.0] Maccabees to Muhammad	
CLCV 2008/ ENGL 2012 [0.5]	
or	
CLCV 2010/ ENGL 2605 [0.5]	
6. 0.5 credit from:	0.5
HUMS 4901 [0.5] Research Seminar: Antiquity to the Middle Ages	
HUMS 4902 [0.5] Research Seminar: Renaissance to Enlightenment	
HUMS 4903 [0.5] Research Seminar: Romanticism to the Present	

HUMS 4904 [0.5] Research Seminar: Non-Western Traditions	
7. 1.0 credit fulfilling the language requirement	1.0
8. 0.5 credit at the 2000-level or above.	0.5
B. Credits Included in the Biology CGPA:	
9. 3.0 credits in:	3.0
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 2001 [0.5] Animals: Form and Function or BIOL 2002 [0.5] Plants: Form and Function	
BIOL 2104 [0.5] Introductory Genetics or BIOL 2107 [0.5] Fundamentals of Genetics	
BIOL 2200 [0.5] Cellular Biochemistry or BIOL 2201 [0.5] Cell Biology and Biochemistry	
BIOL 2303 [0.5] Microbiology or BIOL 2600 [0.5] Ecology	
10. 2.0 credits from:	2.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II	
CHEM 2203 [0.5] Organic Chemistry I	
CHEM 2204 [0.5] Organic Chemistry II	
CHEM 2207 [0.5] Introduction to Organic Chemistry I & CHEM 2208 [0.5] Introduction to Organic Chemistry II	
11. 3.0 credits in BIOL or BIOC at the 3000 level or above.	3.0
Total Credits	20.0

Note:

- For Item 4 above, students who transfer into the B. Hum. may use up to 2.0 credits of any previously completed art and/or music courses (with the exception of advanced placement courses); students who study abroad may use up to 2.0 credits of art and/or music courses taken abroad; students enrolled in a Combined Honours in Humanities and Art History or Humanities and Music may substitute up to 1.0 credit of music or art from their combined discipline for the respective requirement or part thereof.
- For Items 3 and 7 above, students who must take a beginner's-level prerequisite to their Intermediate Language Requirement should do so in place of RELI 1731 & HUMS 1005. Students who are already able to demonstrate a proficiency in a second-language at an intermediate level may have the requirement waived, and in that case may be required to take an additional elective credit at the 2000-level or above in order to bring their total number of credits up to the required 20.0.
- For items 9 and 10, students taking CHEM 1005 and CHEM 1006 will be required to obtain a grade of B- or higher in CHEM 1006 to take BIOL 2200, and more advanced courses in BIOC and CHEM and advanced laboratory courses in BIOL for which BIOL 2200 is a prerequisite.

Minor in Biology (4.0 credits)

The Minor in Biology is available to students registered in degree programs other than those offered by the Department of Biology.

Requirements (4.0 credits)

1. 1.0 credit in:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
2. 1.0 credit from:		1.0
BIOL 1105 [0.5]	Biological Methods, Analysis and Interpretation	
BIOL 1010 [0.5]	Biotechnology and Society	
BIOL 1902 [0.5]	Natural History	
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2002 [0.5]	Plants: Form and Function	
BIOL 2005 [0.5]	Human Biology	
BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
BIOL 2303 [0.5]	Microbiology	
BIOL 2903 [0.5]	Natural History and Ecology of Ontario	
3. 1.0 credit in BIOL at the 2000-level or higher		1.0
4. 1.0 credit in BIOL at the 3000-level or higher		1.0
Total Credits		4.0

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfill any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option,

please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the

16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Biology, Bioinformatics: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Biology and Bioinformatics students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: BIOL 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor,

Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology
Chemistry	
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry
Earth Sciences	
ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology
Food Sciences	
FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology
Geography	
GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties
Neuroscience	
NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5] Education Research in Biology

CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs

CHEM 1004 [0.5] Drugs and the Human Body

CHEM 1007 [0.5] Chemistry of Art and Artifacts

ERTH 1010 [0.5] Our Dynamic Planet Earth

ERTH 1011 [0.5] Evolution of the Earth

ERTH 2415 [0.5] Natural Disasters

ISCI 1001 [0.5] Introduction to the Environment

ISCI 2000 [0.5] Natural Laws

ISCI 2002 [0.5] Human Impacts on the Environment

MATH 0107 [0.5] Algebra and Geometry

PHYS 1901 [0.5] Planetary Astronomy

PHYS 1902 [0.5] From our Star to the Cosmos

PHYS 1905 [0.5] Physics Behind Everyday Life

PHYS 2903 [0.5] Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students

MATH 0005 [0.5] Precalculus: Functions and Graphs

MATH 0006 [0.5] Precalculus: Trigonometric Functions and Complex Numbers

MATH 1009 [0.5] Mathematics for Business

MATH 1119 [0.5] Linear Algebra: with Applications to Business

MATH 1401 [0.5] Elementary Mathematics for Economics I

MATH 1402 [0.5] Elementary Mathematics for Economics II

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies,

Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines.

Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Regulations

In addition program requirements described in this section, students must satisfy the Academic Regulations of the University, including the process of Academic Continuation Evaluation.

Students should consult the College and its website when planning their program and selecting courses.

Language Requirement

Language courses are normally selected from the following list and chosen in consultation with the College's Academic Advisor. It may be necessary to fulfill a prerequisite before taking these courses.

- GREK 2200 and GREK 2201
- LATN 2200 and LATN 2201
- FREN 1100 [1.0] or FREN 2100 [1.0]
- GERM 2010 and GERM 2020, or GERM 2110 [1.0]
- ITAL 2010 and ITAL 2020, or ITAL 2110 [1.0]
- RELI 2010
- RUSS 2010 and RUSS 2020
- SPAN 2010 and SPAN 2020, or SPAN 2110 [1.0]

Requirement for Full-Time Study

Students in the Humanities program must complete a minimum of 4.0 credits by the end of the summer session. The College may permit students to study abroad for a year while remaining registered in the program. For those students permitted to study abroad, Carleton credits commensurate to studies taken abroad will be determined by the College and awarded towards the student's degree. In exceptional circumstances (usually financial need or sickness) the College may also permit students to take a leave of absence for one year while remaining registered in the program.

Academic Continuation Evaluation for Bachelor of Humanities

Students in the Bachelor of Humanities degree follow the Academic Continuation Evaluation (ACE) regulations described in Section 3.2 of the *Academic Regulations of the University* with the following additions and amendments.

The Bachelor of Humanities degree defines an Overall CGPA and a Core CGPA.

HUMANITIES CORE COURSES

HUMS 1000 [1.0]	Myth and Symbol
HUMS 2000 [1.0]	Reason and Revelation
HUMS 3000 [1.0]	Culture and Imagination
HUMS 4000 [1.0]	Politics, Modernity and the Common Good

At each ACE assessment, Bachelor of Humanities students are evaluated on the basis of their Overall CGPA. The Core CGPA is assessed only at the end of each winter term.

Students are *Eligible to Continue* (EC) if the Overall CGPA is at least 6.50 and the Core CGPA is at least 6.50.

A student who does not receive the status *Eligible to Continue* (EC) but who has an Overall CGPA of at least 6.00 and a Core CGPA of at least 6.00 is placed on *Academic Warning* (AW).

A student is required to leave the program with the decision *Continue in Alternate* (CA) if:

1. the student was on *Academic Warning* (AW) and does not achieve *Eligible to Continue* (EC) at the next ACE assessment,
or
2. the student has an Overall CGPA of less than 6.00 or a Core CGPA of less than 6.00 when assessed.

Transfer from B.Hum. to B.J.Hum.

A student who has completed the first year of the B.Hum. and is *Eligible to Continue* (EC) may apply to transfer into the second year of the B.J. Hum. and will be accepted at the discretion of the School of Journalism and the College of Humanities, and must normally have an overall CGPA of 10.0 (A-) or higher. Transfers into higher years will not be considered.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary

Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions and Calculus and Vectors are recommended.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Biology (BIOL) Courses

BIOL 1010 [0.5 credit]

Biotechnology and Society

A course for students interested in the science behind recent advances in biotechnology. The different ways in which biotechnology is being applied in agriculture, health care, and the environment will be examined.

Precludes additional credit for Credit will not be given if taken concurrently with, or after BIOL 2200 or BIOC 2200 or BIOL 2201. Students in Biology and Biochemistry programs may only take this course as a free elective. Lectures three hours a week.

BIOL 1103 [0.5 credit]

Foundations of Biology I

A research-oriented course focusing on the scientific process of biological exploration at the cellular level. Topics include cell organization, metabolism, genetics, and reproduction.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 1003 (no longer offered).

Prerequisite(s): Ontario 4U/M in Biology (or equivalent), or Ontario 4U/M in Chemistry (or equivalent).

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1104 [0.5 credit]

Foundations of Biology II

A research-oriented course focusing on the scientific process of biological exploration at the macroscale. Topics include evolution, diversity of life, and ecological relationships.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 1004 (no longer offered).

Prerequisite(s): Ontario 4U/M in Biology (or equivalent) or BIOL 1103.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1105 [0.5 credit]

Biological Methods, Analysis and Interpretation

Formulation of biological research questions, development of hypotheses and predictions, design of experiments, collection and analysis of data, interpretation and presentation of results.

Lectures three hours a week.

BIOL 1902 [0.5 credit]

Natural History

A course designed primarily for students in non-biology programs to investigate the natural history of plants and animals, and the communities in which they occur. Particular attention is paid to the Ottawa region, but appropriate examples from other locales are also included. Lectures three hours a week.

BIOL 2001 [0.5 credit]**Animals: Form and Function**

An introduction to the diverse structures of animals (both invertebrates and vertebrates) in relationship to their functions, discussed within an evolutionary framework.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2002 [0.5 credit]**Plants: Form and Function**

An introduction to the structure and development of higher plants (at cellular, morphological and organism levels) discussed in relation to their function.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2005 [0.5 credit]**Human Biology**

A course for non-specialists interested in how the human body works. Topics will include biological molecules, cells, genetics, and various organ systems. Examples will be used to connect concepts taught in the course with general knowledge of human health and disease.

Prerequisite(s): BIOL 1003 or BIOL 1103 and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006) or permission of the Department. Students in Biology and Biochemistry programs may only take this course as a free elective.

Lectures three hours a week.

BIOL 2104 [0.5 credit]**Introductory Genetics**

Lecture/laboratory course on the mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics. It is strongly recommended that this course be taken by Biology majors in their second year of study.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 2106 (no longer offered) and BIOL 2107. Credit for BIOL 2106 will only be given if taken before BIOL 2104.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2107 [0.5 credit]**Fundamentals of Genetics**

Mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics.

Precludes additional credit for BIOL 2104 and BIOL 2106 (no longer offered).

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week.

BIOL 2200 [0.5 credit]**Cellular Biochemistry**

Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.

Includes: Experiential Learning Activity

Also listed as BIOC 2200.

Precludes additional credit for BIOL 2201.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), or permission of the Department.

Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2201 [0.5 credit]**Cell Biology and Biochemistry**

A study of the molecular, metabolic and structural organization of cells in relation to function. This course is recommended for students not taking upper year Biology laboratory courses for which BIOL/BIOC laboratories are prerequisites.

Precludes additional credit for BIOL 2200, BIOC 2200.

Prerequisite(s): (BIOL 1003 or BIOL 1103) and (CHEM 1002 or CHEM 1006), or permission of the Department.

Lectures three hours a week.

BIOL 2301 [0.5 credit]**Biotechnology I**

An introductory course on the science, technology, entrepreneurial skills and business considerations related to biotechnology. The course will survey broadly across the disciplines of Biology, including applications in agriculture, health, environment and industry.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the department.

Lectures and workshops three hours a week

BIOL 2303 [0.5 credit]**Microbiology**

The biology of the bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.

Also listed as ENVE 2002.

Prerequisite(s): BIOL 1003 or BIOL 1103.

Lectures three hours a week.

BIOL 2600 [0.5 credit]**Ecology**

The scientific study of interactions of living organisms and their environment, and how these affect the distribution and abundance of life. Topics include energy transformation and flow, nutrient cycling, population and community dynamics, human impacts on ecosystems, conservation issues. Laboratory includes field and computer exercises.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), or permission of the Department.

Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2903 [0.5 credit]**Natural History and Ecology of Ontario**

Introduction to the remarkable diversity and ecological relationships of Ontario's flora and fauna, which are explored in a habitat context.

Precludes additional credit for BIOL 1903 (no longer offered).

Prerequisite(s): BIOL 1004 or BIOL 1104 or BIOL 1902.

Lectures three hours a week.

BIOL 3004 [0.5 credit]**Insect Diversity**

Introductory course dealing with the taxonomic diversity, anatomy, behavior and physiology of insects, as well as their impacts on ecosystems, agriculture and animal and human health.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4601.

Prerequisite(s): BIOL 2001.

Lectures three hours a week.

BIOL 3008 [0.5 credit]**Bioinformatics**

A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.

Includes: Experiential Learning Activity

Also listed as BIOC 3008, COMP 3308.

Prerequisite(s): BIOC 2200 or BIOL 2200, or BIOL 2201, or permission of the Department.

Lectures two hours a week, computer workshop three hours a week.

BIOL 3102 [0.5 credit]**Mycology**

This introductory course will cover the morphology, physiology, life cycles, evolution, ecology and biotechnology of the fungi.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2104 or BIOL 2107.

Lectures three hours a week.

BIOL 3104 [0.5 credit]**Molecular Genetics**

A lecture course dealing with modern advances in molecular genetics.

Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department.

Lectures three hours a week.

BIOL 3111 [0.5 credit]**Vertebrate Evolution: Mammals, Reptiles, and Birds**

Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as EARTH 3111.

Prerequisite(s): BIOL 2001 or EARTH 1009, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

BIOL 3112 [0.5 credit]**Vertebrate Evolution: Fish and Amphibians**

Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as EARTH 3112.

Prerequisite(s): BIOL 2001 or EARTH 1009, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

BIOL 3201 [0.5 credit]**Cell Biology**

A lecture and laboratory course on the structure, composition, and function of eukaryotic cells.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2104 and BIOL 2200/BIOC 2200, or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 3202 [0.5 credit]**Principles of Developmental Biology**

Introduction to the underlying principles and mechanisms governing development in multicellular animals and plants. Differentiation, growth, morphogenesis, and patterning will be examined at the organismal, cellular, and molecular levels to provide a balanced view of developmental phenomena in key model organisms.

Prerequisite(s): BIOL 2104 or BIOL 2107 and one of BIOL 2001 or BIOL 2002, or permission of the Department.

Lectures three hours a week.

BIOL 3205 [0.5 credit]**Plant Biochemistry and Physiology**

A lecture and laboratory course consisting of selected topics in metabolism and physiology of plants, including photosynthesis, nutrient uptake and transport, intermediary and secondary metabolism, germination, growth and development.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2002 and BIOL 2200/BIOC 2200, or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 3301 [0.5 credit]**Biotechnology II**

An interdisciplinary course on interactions between science, invention and innovation in biotechnology. Case studies related to regional biotechnology opportunities; social and ethical issues impacting biotechnology.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2301, BIOL 2104 or BIOL 2107, and BIOL 2200/BIOC 2200 or BIOL 2201, or permission of the department.

Lectures and laboratory/workshops three hours a week

BIOL 3303 [0.5 credit]**Experimental Microbiology**

Intensive training in laboratory techniques in microbiology, using bacteria and other microorganisms to demonstrate processes of cell growth, metabolism, gene expression, rapid evolution, gene transfer, microbial community dynamics and interactions with other organisms.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2104, BIOL 2200/BIOC 2200 and BIOL 2303, or permission of the Department.

Lecture/tutorial one and a half hours a week, laboratory four hours a week.

BIOL 3305 [0.5 credit]**Human and Comparative Physiology**

The properties of physiological systems and components of humans and other animals with an emphasis on physical and chemical bases.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 3306.

Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2001.

Lectures three hours a week, laboratory four hours a week.

BIOL 3306 [0.5 credit]**Human Anatomy and Physiology**

The anatomy and physiology of the neuromuscular, cardiovascular, respiratory, and excretory systems of humans with comparison to other animals.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 3305.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), and third year standing.

Lectures three hours per week.

BIOL 3307 [0.5 credit]**Advanced Human Anatomy and Physiology**

The anatomy and physiology of the endocrine, skeletal, digestive, immunological, and reproductive systems, with additional emphasis on the embryological origins of the major physiological systems.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3305 or BIOL 3306.

Lectures three hours per week, workshop or laboratory four hours per week.

BIOL 3501 [0.5 credit]**Biomechanics**

Properties of muscles, tendons, bones, joints and the co-ordinated use of these structures. Human and other animal locomotion and fitness, bird flight, especially the soaring of the vulture and the albatross, and animal migration are covered in detail.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), and third-year standing.

Lectures three hours a week, workshop two hours a week.

BIOL 3601 [0.5 credit]**Ecosystems and Environmental Change**

Exploration of the unique contribution of the ecosystem approach to ecology, and of early key literature in ecosystem ecology through to current work on global environmental change.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600.

Lectures three hours a week, laboratory four hours a week in six sessions.

BIOL 3602 [0.5 credit]**Conservation Biology**

The science of biology as applied to the problem of maintaining species diversity. Topics include: history of conservation biology, valuation of species, indices of biodiversity, extinction, conservation genetics, conservation planning in parks and reserves, landscape ecology and case studies of conservation problems.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600 or permission of the Department.

Lectures three hours a week and laboratory/workshop three hours a week.

BIOL 3604 [0.5 credit]**Statistics for Biologists**

Introduction to the analysis of biological data. Students analyze real biological data sets in weekly laboratory sessions. Methods introduced include simple linear, polynomial, and multiple regression analysis, analysis of variance, nonparametric tests, tests of independence and logistic regression analysis.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 1105 or STAT 2507.

Lectures one and one-half hours and laboratory two and one-half hours a week.

BIOL 3605 [0.5 credit]**Field Course I**

An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.

Includes: Experiential Learning Activity

Also listed as NEUR 3203, for animal behaviour modules only.

Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department. Students may take both BIOL 3605 and BIOL 3606 for credit, but neither may be used to repeat a particular module.

All day, approximately six days a week.

BIOL 3606 [0.5 credit]**Field Course II**

An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.

Includes: Experiential Learning Activity

Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department. Students may take both BIOL 3605 and BIOL 3606 for credit, but neither can be used to repeat a particular module.

All day, approximately six days a week.

BIOL 3608 [0.5 credit]**Principles of Biogeography**

Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.

Includes: Experiential Learning Activity

Also listed as GEOG 3104.

Prerequisite(s): BIOL 2600 or GEOG 1010 or permission of the Department.

Lectures, laboratory, and fieldwork five hours a week.

BIOL 3609 [0.5 credit]**Evolutionary Concepts**

Evolution is the change in population properties across generations. Genetic variation, mutation, selection, drift, gene flow, genome evolution, speciation, development, biodiversity, fossils, and macro-evolution.

Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the instructor.

Lectures three hours a week.

BIOL 3611 [0.5 credit]**Evolutionary Ecology**

The term "adaptation" is meaningful only with respect to an ecological context. Ecological contexts lead to evolutionary outcomes such as diverse mating systems, ageing, sexual reproduction, sexual dimorphism, geographic variation, phenotypic plasticity, and diverse life histories.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4608.

Prerequisite(s): BIOL 2600.

Lectures three hours a week; one field trip.

BIOL 3612 [0.5 credit]**Computational Methods in Ecology and Evolution**

Introduction to the development and use of computer programs to address biological problems. Topics include the development of programs to analyse ecological data, models of population dynamics, deterministic chaos, cellular automata, simulations of foraging behaviour and evolutionary computation.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600 or permission of the Department.

Lectures two hours per week, workshop three hours per week.

BIOL 3801 [0.5 credit]**Plants and Herbivores**

Exploration of the chemical, physiological, ecological and evolutionary interactions that underlie the relationship between plants and their insect herbivores.

Prerequisite(s): BIOL 2001 and BIOL 2002.

Lectures/seminars three hours a week.

BIOL 3802 [0.5 credit]**Animal Behaviour**

Advanced study of animal behaviour including the environmental, genetic, and neural influences on behaviour. Topics such as predator-prey interactions, mating behaviour, migration, parental care and social interactions are interpreted in an evolutionary context.

Prerequisite(s): BIOL 2001 or BIOL 2600 or permission of the Department.

Lectures and workshop/tutorials three hours a week.

BIOL 3804 [0.5 credit]**Social Evolution**

Diversity in social behaviour from evolutionary and ecological perspectives. Topics include ecological determinants of social living, social networks, social foraging, inclusive fitness, kin selection, altruism, cooperation, and mating systems and strategies.

Prerequisite(s): BIOL 2001 and BIOL 2600, or permission of the Department.

Lectures three hours a week.

BIOL 3901 [0.5 credit]**Research Proposal**

The development of a competitive research proposal in consultation with an advisor.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in an Honours Biology program and permission of the Department.

BIOL 3902 [0.5 credit]**Topics in Biology I**

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): third-year standing in a Biology program or permission of the Department.

Lecture, seminars, or workshops three hours per week.

BIOL 3999 [0.0 credit]**Co-operative Work Term Report**

Practical experience for students enrolled in the Co-operative Option. Students must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Biology Co-operative Option and permission of the Department.

BIOL 4008 [0.5 credit]**Molecular Plant Development**

Recent advances in plant development including molecular, biochemical, genomics, and proteomics studies.

Prerequisite(s): BIOL 2002 or permission of the Department.

Lectures three hours a week.

BIOL 4102 [0.5 credit]**Molecular Ecology**

The interface of molecular biology, ecology and population biology. Topics include experimental design and a survey and critique of molecular genetic methods to study ecology.

Prerequisite(s): BIOL 2600 and (BIOL 2104 or BIOL 2107) or permission of the Department.

Lectures three hours a week.

BIOL 4103 [0.5 credit]**Population Genetics**

Evolution of gene frequencies, including selection, mutation, genetic drift, inbreeding, gene flow, and population structure.

Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department. A course in statistics is highly recommended.

Lectures and seminars three hours a week.

BIOL 4104 [0.5 credit]**Evolutionary Genetics**

An overview of the molecular evidence of evolution, speciation as well as the phylogenetic analysis of biological sequence data and biometrical traits.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 2001 or BIOL 2002) and (BIOL 2104 or BIOL 2107) or permission of the Department. A course in statistics is recommended.

Lectures and computer lab three hours a week.

BIOL 4106 [0.5 credit]**Advances in Molecular Biology**

Review of the application of high throughput approaches to research in molecular and cellular biology and biochemistry with an emphasis on gene function and human disease progression.

Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3201).

Lectures and seminars three hours a week.

BIOL 4109 [0.5 credit]**Laboratory Techniques in Molecular Genetics**

This laboratory course provides practical familiarity with commonly used techniques in molecular genetics. The laboratory is suitable for students with a developing interest in problems of molecular and cellular biology and biochemistry.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2303 and BIOL 3104 or permission of the Department.

Lecture/laboratory six hours a week in two sessions.

BIOL 4200 [0.5 credit]**Immunology**

The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.

Also listed as BIOC 4200.

Prerequisite(s): BIOL 3201 or permission of the Department.

Lectures three hours a week.

BIOL 4201 [0.5 credit]**Advanced Cell Culture and Tissue Engineering**

Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering.

Includes: Experiential Learning Activity

Also listed as BIOC 4201.

Prerequisite(s): BIOL 3201 or permission of the Department.

Laboratory four hours per week, tutorial one hour a week. Labs require regular participation outside of the scheduled lab time to maintain cell cultures and set up or complete experiments.

BIOL 4202 [0.5 credit]**Mutagenesis and DNA Repair**

A mechanistic study of mutagenesis and DNA repair.

Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.

Also listed as BIOC 4202.

Prerequisite(s): BIOL 3104 and BIOL 2200/BIOC 2200 or permission of the Department.

Lectures and tutorial three hours a week.

BIOL 4203 [0.5 credit]**Evolution of Sex**

The evolution of sex, including meiosis, syngamy, sex determination, sex chromosomes, and gender from organismal, genetic, and developmental perspectives; the origin, maintenance, function, and ubiquity of sex.

Prerequisite(s): BIOL 2104 or BIOL 2107.

Lectures three hours a week.

BIOL 4206 [0.5 credit]**Human Genetics**

A survey of human genetic variation and mutation in a molecular genetics context. Topics may include molecular basis of diseases, chromosomal abnormalities, genomic imprinting, cancer genetics, genomics, gene mapping and gene therapy.

Prerequisite(s): BIOL 3104 or permission of the Department.

Lectures three hours a week.

BIOL 4207 [0.5 credit]**Advanced Embryology & Developmental Biology**

A laboratory-based exploration of techniques and recent developments in the use of model embryological systems as applied to questions of development and human health. Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3201 or BIOL 3202 or permission of the Department.

Laboratory four hours per week, tutorial one hour a week. Labs require regular participation outside of the scheduled lab time to set up or complete experiments.

BIOL 4209 [0.5 credit]**Advanced Plant Physiology**

An advanced course dealing with recent developments in selected topics of plant physiology.

Prerequisite(s): BIOL 3205 and CHEM 2203, CHEM 2204 or permission of the Department.

Lectures/discussion three hours a week.

BIOL 4300 [0.5 credit]**Applied Microbiology**

Studies of the application of microorganisms. Topics may include: microbial communities, and agricultural, pharmaceutical, industrial and health sciences.

Prerequisite(s): (BIOL 2200/BIOC 2200 or BIOL 2201), BIOL 2303 and (BIOL 3104 or BIOL 3303) or permission of the Department.

Lectures and tutorial three hours a week.

BIOL 4301 [0.5 credit]**Current Topics in Biotechnology**

Explorations of developing biotechnologies in areas such as microbial products, protein engineering, plant genetic engineering, environmental remediation, pharmaceuticals production and medical diagnostics and therapy.

Prerequisite(s): BIOL 3301 or permission of the department.

Lectures and tutorials three hours a week.

BIOL 4303 [0.5 credit]**Advances in Microbiology**

Exploration of current microbiology including the molecular biology of infectious agents, use of model micro-organisms to study human cells and diseases, and functional genomics and proteomics. Special attention will be paid to the field's "big questions". Students will critically examine a number of research proposals.

Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3303 or BIOC 3102) or permission of the Department.

Lectures three hours per week.

BIOL 4304 [0.5 credit]**Forensic Biology**

An introduction to forensics that covers topics in molecular biology, biochemistry, genetics, population genetics and statistics as they relate to forensic biology. The course will describe the techniques used to identify body fluids and generate DNA profiles as well as the interpretation of forensic results.

Prerequisite(s): (BIOL 2104 or BIOL 2107) and (BIOL 2200/BIOC 2200 or BIOL 2201) or permission of the Department.

Lectures three hours a week.

BIOL 4306 [0.5 credit]**Animal Neurophysiology**

A course dealing with recent advances made in particular areas of animal neurophysiology.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4305.

Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.

Lectures two hours a week, workshops or laboratory four hours a week.

BIOL 4309 [0.5 credit]**Studies in Human Performance**

Biomechanical underpinnings of human performance including the quantitative analysis of human motion in normal activities and in athletic performance. Students will learn modern motion capture methods. This course will require students to design and execute an independent project.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.

Lecture three hours per week, workshop/labs three hours per week.

BIOL 4317 [0.5 credit]**Neuroethology: The Neural Basis of Animal Behaviour**

Proximate mechanisms underlying animal behaviour.

Focus on evolution of nervous systems in response to environmental selection pressures. Topics include: genetic and hormonal influences on behaviour (e.g. maternal care); unique sensory worlds (e.g. magnetic); various levels of neural integration, from simple reflexes to complex social behaviour.

Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.

Lectures three hours a week.

BIOL 4318 [0.5 credit]**Adaptations to Extreme Environments**

Lectures, discussions and student presentations will be used to examine adaptations of animals to extreme environments (e.g. desert) or lifestyles (e.g. diving), at the physiological, biochemical and molecular levels. Emphasis on becoming familiar with the current primary literature.

Prerequisite(s): BIOL 3305, or permission of the Department.

Lectures/workshops three hours a week.

BIOL 4319 [0.5 credit]**Studies in Exercise Physiology**

Physiological mechanisms underlying human athletic performance. Exercise physiology and cardio-respiratory activity, metabolic regulation and musculoskeletal function. Practical experience will be gained in the workshop/laboratory based experimental sessions.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.

Lectures two hours per week, workshop/labs three hours per week.

BIOL 4500 [0.5 credit]**The Biology of Birds**

Introduction to ornithology, the study of birds; the evolution of birds, migration, geographic variation, adaptations for flight, feeding, reproduction; extinction and preservation.

Prerequisite(s): BIOL 2001 or permission of the department.

Lectures three hours per week.

BIOL 4501 [0.5 credit]**The Taxonomy of Birds**

The taxonomy of birds and species identification are learned through the use of study skins in the lab. Field excursions allow first-hand study of various species. Participants must acquire a pair of binoculars and one of the recommended field guides.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2001 or permission of the department.

Laboratory/field excursions four hours per week.

BIOL 4502 [0.5 credit]**Herpetology**

Herpetology is the study of amphibians and reptiles. The behaviours, physiological ecology, conservation and identification of amphibians and reptiles will be examined through lectures, seminars and hands-on activities.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2001.

Lectures or seminars three hours per week.

BIOL 4503 [0.5 credit]**Fish Ecology, Conservation and Management**

Introduction to the diversity and environmental biology of the world's fishes. Applied issues in fisheries management, conservation, and aquaculture. Workshops expose students to techniques in fisheries science through hands-on demonstrations and field excursions.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600 or permission of the Department.

Lectures/seminars two hours a week, plus labs/workshops two hours a week.

BIOL 4504 [0.5 credit]**Ecology of Freshwater Invertebrates**

Overview of the diversity and ecology of freshwater invertebrates. Aquatic invertebrates from local bodies of water will be sampled and identified in the lab.

Experiments on the ecology and behaviour of model species of freshwater invertebrates will also be conducted in the lab.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2001 and BIOL 2600.

Seminar and lab four hours a week.

BIOL 4505 [0.5 credit]**Coral Reefs**

Examining the diversity of life on coral reefs and their interactions across ecological scales, from the biochemistry of zooxanthellae symbiosis to landscape scale trophodynamics, reticulate evolution, and reef fisheries. Emphasis is on synthesis writing drawn from the current primary literature.

Prerequisite(s): BIOL 2600.

Lectures/seminars three hours a week

BIOL 4506 [0.5 credit]**Cactus Biology**

Covers the cactus family over its entire range, including most of the western hemisphere, with discussion on their anatomy, physiology, ecology, evolution, and classification. Topics include how cacti are both typical flowering plants in some regards, and atypical in others.

Prerequisite(s): BIOL 2002.

Lectures/seminars three hours a week

BIOL 4507 [0.5 credit]**Ecological Parasitology**

Key concepts in the ecological study of parasites and pathogens, underpinned by evolutionary thinking and relevant to fundamental and applied questions of co-evolution, disease ecology, epidemiology, emerging infectious diseases, environmental parasitology, evolutionary transitions, host species range, immunity, resistance, tolerance, transmission mode, and virulence.

Prerequisite(s): BIOL 2600 and one of the following:

BIOL 3601, BIOL 3604, BIOL 3609, BIOL 3611, BIOL 3612, BIOL 3801, BIOL 3802, BIOL 3804.

Lectures or seminars 3 hours per week.

BIOL 4602 [0.5 credit]**Evolutionary Applications across Disciplines: From Medicine to Conservation**

Evolutionary principles contributing to advancements across fields including medicine, agriculture, conservation, climate change, and engineering. Topics include evolution of virulence, causes of variation in human health, evolution of resistance to pesticides, interventions for recovery of species at risk, and biomimetic modeling in engineering and architecture.

Prerequisite(s): BIOL 1104 and third-year standing.

Lectures/workshops three hours per week.

BIOL 4603 [0.5 credit]**Insect Evolution and Biology**

Major questions on the origin, evolution and adaptation of structures and physiology of terrestrial arthropods, especially insects.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3004, or permission of the Department.

Lectures two hours a week, laboratory four hours a week.

BIOL 4604 [0.5 credit]**Landscape Ecology**

Landscape ecology is the study of how landscape structure affects the abundance and distribution of organisms. The focus of this course is on research methods and results in landscape ecology. Applications in forestry, agriculture, and species conservation.

Prerequisite(s): BIOL 2600 or equivalent, BIOL 3601 or BIOL 3602 or BIOL 3608 or equivalent, and fourth-year standing in Biology, Geography, or Environmental Sciences.

Lecture three hours a week.

BIOL 4802 [0.5 credit]**Advanced Animal Behaviour**

Contemporary issues in behavioural ecology. Topics may include the relevance of behavioural ecology to conservation biology, to new insights into human social behaviour, and will be selected through consultation between professor and students.

Prerequisite(s): BIOL 3802 or BIOL 3804, or permission of the Department.

Lectures or workshops three hours a week.

BIOL 4810 [0.5 credit]**Education Research in Biology**

An introduction to the science of teaching and learning in biology. Students will be introduced to the foundational concepts in, and tools of, Discipline-Based Education Research (DBER) and will conduct their own DBER research project.

Includes: Experiential Learning Activity

Prerequisite(s): 4th year standing, or permission of the department This course can only be used by science students as a free elective.

Also offered at the graduate level, with different requirements, as BIOL 5810, for which additional credit is precluded.

Seminar three hours per week, classroom-based research one hour per week.

BIOL 4901 [0.5 credit]**Directed Special Studies**

Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Prerequisite(s): permission of the Department. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

BIOL 4902 [0.5 credit]**Topics in Biology II**

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): fourth-year standing in a Biology program or permission of the Department.

Lecture, seminars, or workshops three hours per week.

BIOL 4905 [1.0 credit]**Honours Workshop**

Within the context of an active learning environment, students participate in a variety of activities which may include literature reviews and critiques, media releases and response papers, oral presentations, and posters. Projects are focused on an area of biological research of interest to the student.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4907 and BIOL 4908.

Prerequisite(s): fourth-year standing in an Honours biology program and permission of the Department.

Workshops three hours per week.

BIOL 4907 [1.0 credit]**Honours Essay and Research Proposal**

An independent critical review and research proposal, using library resources, under the direct supervision of a Faculty advisor. Evaluation is based on a written report and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4905 and BIOL 4908.

Prerequisite(s): fourth-year standing in an Honours Biology program and permission of the Department.

BIOL 4908 [1.0 credit]**Honours Research Thesis**

An independent research project undertaken in the field and/or the laboratory, under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4905 and BIOL 4907.

Prerequisite(s): fourth-year standing in an Honours biology program with a minimum CGPA of 8.0 in the major or permission of the Department.

Biotechnology

This section presents the requirements for programs in:

- Biochemistry and Biotechnology B.Sc. Honours
- Biology and Biotechnology B.Sc. Honours

Program Requirements**Biochemistry and Biotechnology****B.Sc. Honours (20.0 credits)****A. Credits Included in the Major CGPA (15.0 credits)****1. 4.0 credits in:** 4.0

BIOL 1103 [0.5] Foundations of Biology I

BIOL 1104 [0.5] Foundations of Biology II

BIOL 2104 [0.5] Introductory Genetics

BIOL 2301 [0.5] Biotechnology I

BIOL 2303 [0.5] Microbiology

BIOL 3104 [0.5] Molecular Genetics

BIOL 3301 [0.5] Biotechnology II

BIOL 4301 [0.5] Current Topics in Biotechnology

2. 0.5 credit from: 0.5

BIOL 2001 [0.5] Animals: Form and Function

BIOL 2002 [0.5] Plants: Form and Function

3. 0.5 credit from: 0.5

BIOL 3201 [0.5] Cell Biology

BIOL 3205 [0.5] Plant Biochemistry and Physiology

BIOL 3303 [0.5] Experimental Microbiology

BIOL 3305 [0.5] Human and Comparative Physiology

BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics

4. 0.5 credit from: 0.5

BIOL 3102 [0.5] Mycology

BIOL 3201 [0.5] Cell Biology

BIOL 3303 [0.5] Experimental Microbiology

BIOL 4106 [0.5] Advances in Molecular Biology

BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics

BIOL 4200 [0.5] Immunology

BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering

BIOL 4300 [0.5] Applied Microbiology

BIOL 4303 [0.5] Advances in Microbiology

5. 3.0 credits in: 3.0

BIOC 2200 [0.5] Cellular Biochemistry

BIOC 3101 [0.5] General Biochemistry I

BIOC 3102 [0.5] General Biochemistry II

BIOC 3103 [0.5] Practical Biochemistry I

BIOC 3104 [0.5] Practical Biochemistry II

BIOC 3202 [0.5] Biophysical Techniques and Applications

6. 1.0 credit from: 1.0

BIOC 4907 [1.0] Honours Essay and Research Proposal

BIOC 4908 [1.0] Research Project

7. 1.0 credit from: 1.0

BIOL 3008 [0.5] Bioinformatics

or BIOC 3203 [0.5] Biochemical Pharmacology

BIOC 4004 [0.5] Industrial Biochemistry

BIOC 4005 [0.5] Biochemical Regulation

BIOC 4007 [0.5] Membrane Biochemistry

BIOC 4008 [0.5] Computational Systems Biology

BIOC 4009 [0.5] Biochemistry of Disease

BIOC 4200 [0.5] Immunology

BIOC 4201 [0.5] Advanced Cell Culture and Tissue Engineering

BIOC 4202 [0.5] Mutagenesis and DNA Repair

BIOC 4203 [0.5] Advanced Metabolism

BIOC 4204 [0.5] Protein Biotechnology

BIOC 4708 [0.5] Principles of Toxicology

8. 4.0 credits in: 4.0

CHEM 1001 [0.5] General Chemistry I

CHEM 1002 [0.5] General Chemistry II

CHEM 2103 [0.5] Physical Chemistry I

or BIOC 2300 [0.5] Physical Biochemistry

CHEM 2203 [0.5] Organic Chemistry I

CHEM 2204 [0.5] Organic Chemistry II

CHEM 2303 [0.5] Analytical Chemistry II

CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry

CHEM 3201 [0.5] Advanced Organic Chemistry I

9. 0.5 credit from:	0.5
BIOC courses listed in, but not used to fulfil, Item 7 above	
BIOC 2400 [0.5] Independent Research I	
BIOC 3400 [0.5] Independent Research II	
BIOC 4001 [0.5] Methods in Biochemistry	
BIOC 4901 [0.5] Selected Topics in Biochemistry	
BIOL courses listed in, but not used to fulfil, Item 3 or 4	
BIOL 2001 [0.5] Animals: Form and Function	
BIOL 2002 [0.5] Plants: Form and Function	
BIOL 3102 [0.5] Mycology	
BIOL 3202 [0.5] Principles of Developmental Biology	
BIOL 3306 [0.5] Human Anatomy and Physiology	
BIOL 3307 [0.5] Advanced Human Anatomy and Physiology	
BIOL 3501 [0.5] Biomechanics	
BIOL 4008 [0.5] Molecular Plant Development	
BIOL 4103 [0.5] Population Genetics	
BIOL 4104 [0.5] Evolutionary Genetics	
BIOL 4206 [0.5] Human Genetics	
BIOL 4207 [0.5] Advanced Embryology & Developmental Biology	
BIOL 4209 [0.5] Advanced Plant Physiology	
BIOL 4304 [0.5] Forensic Biology	
BIOL 4309 [0.5] Studies in Human Performance	
BIOL 4317 [0.5] Neuroethology: The Neural Basis of Animal Behaviour	
BIOL 4318 [0.5] Adaptations to Extreme Environments	
BIOL 4319 [0.5] Studies in Exercise Physiology	
BIOL courses listed in but not used to fulfil Item 4 above	
CHEM 3100 [0.5] Physical Chemistry II	
CHEM 3107 [0.5] Experimental Methods in Nanoscience	
CHEM 3202 [0.5] Advanced Organic Chemistry II	
CHEM 3205 [0.5] Experimental Organic Chemistry	
CHEM 3600 [0.5] Introduction to Nanotechnology	
CHEM 3700 [0.5] Industrial Applications of Chemistry	
CHEM 3800 [0.5] The Chemistry of Environmental Pollutants	
CHEM 4201 [0.5] Macromolecular Nanotechnology	
CHEM 4406 [0.5] Pharmaceutical Drug Design	
B. Credits Not Included in the Major CGPA (5.0 credits)	
10. 1.0 credit from:	1.0
PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II	
PHYS 1003 [0.5] Introductory Mechanics and & PHYS 1004 [0.5] Thermodynamics	
PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion	
11. 1.5 credits in:	1.5
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
12. 2.0 credits in Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0

13. 0.5 credit in free elective.	0.5
Total Credits	20.0
Biology and Biotechnology	
B.Sc. Honours (20.0 credits)	
A. Credits Included in the Major CGPA (13 credits)	
1. 6.5 credits in:	6.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation	
BIOL 2001 [0.5] Animals: Form and Function	
BIOL 2002 [0.5] Plants: Form and Function	
BIOL 2104 [0.5] Introductory Genetics	
BIOL 2200 [0.5] Cellular Biochemistry	
BIOL 2301 [0.5] Biotechnology I	
BIOL 2303 [0.5] Microbiology	
BIOL 3104 [0.5] Molecular Genetics	
BIOL 3201 [0.5] Cell Biology	
BIOL 3301 [0.5] Biotechnology II	
BIOL 4301 [0.5] Current Topics in Biotechnology	
2. 1.5 credit in:	1.5
BUSI 2800 [0.5] Entrepreneurship	
BIOC 3101 [0.5] General Biochemistry I	
BIOC 3102 [0.5] General Biochemistry II	
3. 4.0 credits from:	4.0
BIOC 2300 [0.5] Physical Biochemistry or CHEM 2103 [0.5] Physical Chemistry I	
BIOC 3008 [0.5] Bioinformatics	
BIOC 3103 [0.5] Practical Biochemistry I	
BIOC 3104 [0.5] Practical Biochemistry II	
BIOC 3202 [0.5] Biophysical Techniques and Applications	
BIOL 3004 [0.5] Insect Diversity	
BIOL 3102 [0.5] Mycology	
BIOL 3205 [0.5] Plant Biochemistry and Physiology	
BIOL 3303 [0.5] Experimental Microbiology	
BIOL 3305 [0.5] Human and Comparative Physiology	
BIOL 3501 [0.5] Biomechanics	
BIOL 3901 [0.5] Research Proposal	
CHEM 3700 [0.5] Industrial Applications of Chemistry	
CHEM 3800 [0.5] The Chemistry of Environmental Pollutants	
FOOD 3005 [0.5] Food Microbiology	
BIOC 4001 [0.5] Methods in Biochemistry	
BIOC 4004 [0.5] Industrial Biochemistry	
BIOC 4005 [0.5] Biochemical Regulation	
BIOC 4007 [0.5] Membrane Biochemistry	
BIOC 4008 [0.5] Computational Systems Biology	
BIOC 4009 [0.5] Biochemistry of Disease	
BIOC 4203 [0.5] Advanced Metabolism	
BIOC 4204 [0.5] Protein Biotechnology	
BIOC 4708 [0.5] Principles of Toxicology	
BIOL 4106 [0.5] Advances in Molecular Biology	
BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics	
BIOL 4200 [0.5] Immunology	

BIOL 4201 [0.5]	Advanced Cell Culture and Tissue Engineering	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
BIOL 4206 [0.5]	Human Genetics	
BIOL 4304 [0.5]	Forensic Biology	
BIOL 4901 [0.5]	Directed Special Studies	
TSES 4001 [0.5]	Technology and Society: Risk	
TSES 4002 [0.5]	Technology and Society: Forecasting	
4. 1.0 credit in:		1.0
BIOL 4905 [1.0]	Honours Workshop	
	or BIOL 4907 [1.0] (Honours Essay and Research Proposal	
	or BIOL 4908 [1.0] (Honours Research Thesis	
B. Credits Not Included in the Major CGPA (7.0 credits)		
5. 2.0 credits in:		2.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2203 [0.5]	Organic Chemistry I	
& CHEM 2204 [0.5]	Organic Chemistry II (See Note, below)	
6. 0.5 credit in:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
7. 1.5 credits from:		1.5
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
MATH 1107 [0.5]	Linear Algebra I	
PHYS 1007 [0.5]	Elementary University Physics I	
	or PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics	
PHYS 1008 [0.5]	Elementary University Physics II	
	or PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
8. 2.0 credits in	Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
9. 1.0 credit in	free electives.	1.0
Total Credits		20.0

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
- 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics

PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars

PHYS 3606 [0.5]	Modern Physics II
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PHYS 3608 [0.5]	Modern Applied Physics
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Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Biotechnology: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

Co-operative Education - Bachelor of Science

The following programs in the Bachelor of Science Honours offer a co-operative education option:

Applied Physics, Biochemistry (including computational), Bioinformatics, Biology (including computational), Biotechnology, Chemistry (including computational), Earth Sciences, Environmental Science, Food Science and Nutrition, Geomatics, Neuroscience, Neuroscience and Mental Health, Physical Geography and Physics.

Students in all streams of the Bachelor of Science must successfully complete three (3) work terms to obtain the co-op designation.

Co-op Admission and Continuation Requirements for Students in the Bachelor of Science

For admission to and continuation in the co-op option, all students must:

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000

Program-Specific Admission and Continuation Requirements:

Applied Physics, Biochemistry (including computational), Bioinformatics, Biology (including computational), Biotechnology, Chemistry (including computational), Earth Sciences, Environmental Science, Neuroscience, Neuroscience and Mental Health and Physics:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

Food Science and Nutrition

1. Registered as a full-time student in the Bachelor of Science Honours in Food Science and Nutrition;
2. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term, at least 2.0 credits from the following list of courses: FOOD 3001, FOOD 3002, FOOD 3003, FOOD 3004, and FOOD 3005

Geomatics and Physical Geography:

1. Registered in the Bachelor of Science (Honours) Programs in Physical Geography or Geomatics;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
 - a. the required second-year methods courses in their program (GEOG/ENST 2005, GEOG/ENST 2006)
 - b. the required field course in their program (ENST 3900/GEOG 3000/GEOG 3010/GEOG 3030)
5. Be registered as a full-time student.

Co-op Work Term Courses

Physics, Applied Physics, Biology and Physics, Chemistry and Physics, Mathematics and Physics

PHYS 3999 [0.0] Co-operative Work Term Report

Biochemistry and Computational Biochemistry

BIOC 3999 [0.0] Co-operative Work Term

Biochemistry and Biotechnology, Bioinformatics, Biology, Biotechnology, Computational Biology, Biology and Physics

BIOL 3999 [0.0] Co-operative Work Term Report

Chemistry, Chemistry and Physics, Computational Chemistry

CHEM 3999 [0.0] Co-operative Work Term

Earth Sciences

ERTH 3999 [0.0] Co-operative Work Term

Food Science

FOOD 3999 [0.0] Co-operative Work Term

Environmental Science

ENSC 3999 [0.0] Co-operative Work Term

Geomatics

GEOM 3999 [0.0] Co-operative Work Term

Neuroscience and Neuroscience Mental Health

NEUR 3999 [0.0] Co-operative Work Term

Physical Geography

GEOG 3999 [0.0] Co-operative Work Term

Work-Study Patterns

Applied Physics, Biochemistry, Bioinformatics, Biology, Biotechnology, Chemistry, Computational Biochemistry, Computational Biology, Computational Chemistry, Earth Sciences, Environmental Science, Neuroscience, Neuroscience and Mental Health, Physics

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Food Science and Nutrition

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall		Fall	S	Fall	S	Fall	W/S	Fall	S
Winter		Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	O/W	Summer	O/W		

Physical Geography, Geomatics

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for

admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Business

This section presents the requirements for programs in:

- Bachelor of Commerce Honours
- Concentration in Accounting
- Concentration in Business Analytics
- Concentration in Entrepreneurship
- Concentration in Finance
- Concentration in Information Systems
- Concentration in International Business
- Concentration in Management
- Concentration in Marketing
- Concentration in Supply Chain Management
- Bachelor of Commerce
- Bachelor of International Business Honours
- Concentration in International Marketing and Trade
- Concentration in International Strategy and Human Resources Management
- Concentration in Global Financial Management and Systems
- Stream in Business Analytics
- Stream in Entrepreneurship
- Stream in Sustainability
- Minor in Arts Management
- Minor in Business
- Minor in Business for Bachelor of Engineering
- Minor in Business (Entrepreneurship)
- Minor in Business (Sustainability)
- Minor in Human Resources and Management for B.A. Honours Psychology
- Post-Baccalaureate Diploma in Accounting

Program Requirements

Bachelor of Commerce Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits):

1. 2.0 credits in:	2.0
BUSI 1004 [0.5]	Financial Accounting for Business Students
BUSI 1005 [0.5]	Managerial Accounting for Business Students
BUSI 1401 [0.5]	Foundations of Information Systems
BUSI 1800 [0.5]	Introduction to Business
2. 1.0 credit in:	1.0
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
3. 0.5 credit in:	0.5
MATH 1009 [0.5]	Mathematics for Business
4. 1.0 credit in:	1.0
PSYC 1002 [0.5]	Introduction to Psychology II
SOCI 1005 [0.5]	Sociology for Bachelor of Commerce Students
5. 4.0 credits in:	4.0
BUSI 2101 [0.5]	Organizational Behaviour
BUSI 2208 [0.5]	Introduction to Marketing
BUSI 2301 [0.5]	Introduction to Supply and Operations Management
BUSI 2401 [0.5]	Introduction to Data Analytics

BUSI 2504 [0.5]	Business Finance I	
BUSI 2601 [0.5]	Business Law	
BUSI 2701 [0.5]	Fundamentals of International Business	
BUSI 2800 [0.5]	Entrepreneurship	
6. 0.5 credit in:		0.5
STAT 2601 [0.5]	Business Statistics	
7. 1.5 credits in:		1.5
BUSI 3102 [0.5]	Introduction to Human Resources Management	
BUSI 3103 [0.5]	Introduction to Organization Theory	
BUSI 3309 [0.5]	Project Management	
8. 1.0 credit in:		1.0
BUSI 4601 [0.5]	Business Ethics	
BUSI 4609 [0.5]	Strategic Management	
9. 1.0 credit in:	BUSI at the 4000-level	1.0
10. 0.0 credits in:	Business Career Preparation Requirement	0.0
BUSI 1995 [0.0]	Employability Passport I	
BUSI 2995 [0.0]	Employability Passport II	
BUSI 3995 [0.0]	Employability Passport III	
BUSI 4995 [0.0]	Employability Passport IV	
B. Credits Not Included in the Major CGPA (7.5 credits):		
11. 7.5 credits in	free electives.	7.5
Total Credits		20.0

Notes:

- BUSI 4601 and BUSI 4609 in **Item 8** above must be taken at the Sprott School of Business.
- The following courses cannot be used as free electives toward the B.Com. degree: ESLA 1300, ESLA 1500, and any 0000-level course such as MATH 0009 and MATH 0107.
- The 4000-level credit in **Item 9** above must be taken at the Sprott School of Business.
- Students may not continue into 3000-level or higher BUSI courses unless the following two minimum requirements are met: a) successful completion of BUSI 1800 and b) successful completion of BUSI 2800.
- Students require completion of BUSI 1995 to be eligible for registration in BUSI 2101, completion of BUSI 2995 to be eligible for registration in BUSI 3309, and completion of BUSI 3995 to be eligible for registration in BUSI 4609. BUSI 4995 must be completed as part of the degree requirements prior to graduation from the Bachelor of Commerce.

Concentrations in the B.Com. Program

Concentrations described below are open to students registered in the B.Com. program. Students enrolled in a concentration must satisfy the requirements for Bachelor of Commerce (above) while gaining credit for the requirements of the Concentration through appropriate choice of courses. Students in the Concentration in International Business take Business BUSI 4709 Strategic Management for International Business in place of BUSI 4609 Strategic Management and BUSI 4705 Ethics

and Cross-cultural Interaction in place of BUSI 4601 Business Ethics in the B.Com. requirements.

Declaration of Concentration(s)

Normally, students are expected to have declared their concentration(s), if any, before commencing the sixth credit into the program. Only under special circumstances would a student be allowed to enroll in a concentration after the completion of the thirteenth credit.

Declaration of Double Concentrations

To be eligible to declare a second concentration, a student must have completed at least 6.0 credits with a minimum overall CGPA of 8.0.

Concentration in Accounting (4.0 credits)

1. 2.5 credits in:		2.5
BUSI 2001 [0.5]	Intermediate Accounting I	
BUSI 2002 [0.5]	Intermediate Accounting II	
BUSI 3001 [0.5]	Accounting for Business Combinations	
BUSI 3005 [0.5]	Taxation I	
BUSI 3008 [0.5]	Intermediate Management Accounting and Control	
2. 1.5 credits from:		1.5
BUSI 2505 [0.5]	Business Finance II	
BUSI 3007 [0.5]	Auditing I	
BUSI 3040 [0.5]	Data Analytics and Information Systems for Accounting	
BUSI 4003 [0.0]	Accounting Theory	
BUSI 4005 [0.5]	Taxation II	
BUSI 4008 [0.5]	Advanced Management Accounting and Control	
Total Credits		4.0

Concentration in Business Analytics (4.5 credits)

1. 3.5 credits in:		3.5
STAT 2602 [0.5]	Statistical Models for Business Analytics and Finance	
BUSI 3400 [0.5]	Database Design	
BUSI 3406 [0.5]	Business Analytics Principles	
BUSI 3434 [0.5]	Data Visualization	
BUSI 4407 [0.5]	Business Analytics Methods	
BUSI 4410 [0.5]	Responsible Business Analytics	
BUSI 4414 [0.5]	Capstone in Business Analytics	
2. 1.0 credits from:		1.0
BUSI 2402 [0.5]	Business Applications Development	
BUSI 3401 [0.5]	Applications Development for Online Environments	
BUSI 3402 [0.5]	Systems Analysis and Design	
BUSI 3405 [0.5]	Enterprise Architecture	
BUSI 4201 [0.5]	Marketing Metrics	
BUSI 4301 [0.5]	Artificial Intelligence and Business Decision Models	
BUSI 4308 [0.5]	Simulation Modeling and Analytics	
BUSI 4331 [0.5]	Industry 4.0 Technologies and Applications	
BUSI 4400 [0.5]	IS Management and Strategy	
BUSI 4404 [0.5]	IT Infrastructure	

BUSI 4408 [0.5]	Social Analytics
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Total Credits 4.5

Concentration in Entrepreneurship (3.5 credits)

Available to students in the B.Com. or B.I.B. programs only, except those in the B.Com. or B.I.B. with the Stream in Entrepreneurship.

1. 2.0 credits in: 2.0

BUSI 3600 [0.5]	Entrepreneurial Strategies
BUSI 3810 [0.5]	Business Development
BUSI 3820 [0.5]	Practicum in Business Design
BUSI 4810 [0.5]	Practicum in Business Creation
or an approved elective for Entrepreneurship programs	

2. 1.5 credits from a list of approved courses including the following: 1.5

BUSI 3117 [0.5]	Developing Creative Thinking
BUSI 3210 [0.5]	Personal Selling
BUSI 3611 [0.5]	Managing the Family Enterprise
BUSI 4105 [0.5]	Managing Change
BUSI 4117 [1.0]	Creative Thinking
BUSI 4607 [0.5]	Management of Technology and Innovation
BUSI 4708 [0.5]	International Expansion and Operations
BUSI 4710 [0.5]	International New Ventures

Total Credits 3.5

Concentration in Finance (4.5 credits)

1. 3.5 credits in: 3.5

STAT 2602 [0.5]	Statistical Models for Business Analytics and Finance
BUSI 2505 [0.5]	Business Finance II
BUSI 3500 [0.5]	Applied Corporate Finance
BUSI 3502 [0.5]	Investments
BUSI 3512 [0.5]	Derivatives
BUSI 4500 [0.5]	Advanced Corporate Finance
BUSI 4502 [0.5]	Portfolio Management

2. 0.5 credit from 0.5

BUSI 4504 [0.5]	International Finance
BUSI 4505 [0.5]	Global Financial Markets and Institutions
BUSI 4510 [0.5]	Mergers and Acquisitions
BUSI 4511 [0.5]	Fixed Income Analysis

3. 0.5 credit from: 0.5

BUSI 2002 [0.5]	Intermediate Accounting II
or BUSI 2506 [0.5] Financial Statement Analysis	
BUSI 2402 [0.5]	Business Applications Development
BUSI 3001 [0.5]	Accounting for Business Combinations
BUSI 3400 [0.5]	Database Design
BUSI 3402 [0.5]	Systems Analysis and Design
BUSI 4503 [0.5]	Applied Portfolio Management
- or an additional 0.5 credit from the list in item 2, above	

Total Credits 4.5

Concentration in Information Systems (4.0 credits)

1. 2.5 credits in: 2.5

BUSI 2402 [0.5]	Business Applications Development
BUSI 3400 [0.5]	Database Design
BUSI 3402 [0.5]	Systems Analysis and Design
BUSI 4400 [0.5]	IS Management and Strategy
BUSI 4404 [0.5]	IT Infrastructure

2. 1.5 credits from: 1.5

BUSI 3401 [0.5]	Applications Development for Online Environments
BUSI 3405 [0.5]	Enterprise Architecture
BUSI 3406 [0.5]	Business Analytics Principles
BUSI 4308 [0.5]	Simulation Modeling and Analytics
BUSI 4408 [0.5]	Social Analytics
BUSI 4607 [0.5]	Management of Technology and Innovation

Total Credits 4.0

Concentration in International Business (4.0 credits)

1. 2.0 credits in: 2.0

BUSI 3703 [0.5]	International and Comparative Management
BUSI 3704 [0.5]	The Environment of International Business
BUSI 4205 [0.5]	International Marketing Strategy
BUSI 4717 [0.5]	Managing Globalization in Emerging Economies

2. 1.0 credit from: 1.0

BUSI 3301 [0.5]	Global Supply Chain Management
BUSI 3705 [0.5]	International Buyer Behaviour
BUSI 3706 [0.5]	International Business Negotiations
BUSI 4706 [0.5]	International Human Resource Management
BUSI 4707 [0.5]	Regionalism and Globalization
BUSI 4708 [0.5]	International Expansion and Operations
BUSI 4710 [0.5]	International New Ventures
BUSI 4719 [0.5]	Practicum in International Business
BUSI 4504 [0.5]	International Finance
BUSI 4505 [0.5]	Global Financial Markets and Institutions

3. 1.0 credit from: 1.0

ECON 3508 [0.5]	Introduction to Economic Development
ECON 3600 [0.5]	Introduction to International Economics
ECON 3601 [0.5]	Introduction to International Trade
ECON 3602 [0.5]	International Monetary Problems
ECON 3808 [0.5]	The Economics of Transition
GEOG 2200 [0.5]	Global Connections
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
LAWS 3207 [0.5]	International Transactions
LAWS 3208 [0.5]	International Trade Regulation

LAWS 4200 [0.5]	International Economic Law
PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3600 [0.5]	International Institutions
Total Credits	4.0

Note: for Item 3 above, ECON 3600 precludes additional credit for ECON 3601 and ECON 3602.

Concentration in Management (4.0 credits)

1. 2.5 credits in:	2.5
BUSI 3104 [0.5]	Managing Individual Performance
BUSI 3105 [0.5]	Managing and Motivating Teams
BUSI 3106 [0.5]	Managing Conflict and Negotiation
BUSI 4105 [0.5]	Managing Change
BUSI 4112 [0.5]	Organizational Leadership
2. 1.5 credits from:	1.5
BUSI 3117 [0.5]	Developing Creative Thinking
BUSI 3119 [0.0]	Business and Environmental Sustainability
BUSI 3611 [0.5]	Managing the Family Enterprise
BUSI 4104 [0.5]	Strategic Human Resources Management
BUSI 4108 [0.5]	Organizational Learning
BUSI 4111 [1.0]	Training and Development
BUSI 4117 [1.0]	Creative Thinking
BUSI 4120 [0.5]	Environmental Sustainability Management
BUSI 4129 [0.5]	Managing the Arts
Total Credits	4.0

Concentration in Marketing (4.5 credits)

1. 2.0 credits in:	2.0
BUSI 3205 [0.5]	Marketing Communications
BUSI 3207 [0.5]	Marketing Research
BUSI 3209 [0.5]	Consumer Behaviour
BUSI 4208 [0.5]	Marketing Management
2. 2.5 credits from:	2.5
BUSI 3204 [0.5]	Digital Marketing
BUSI 3208 [0.5]	Business-to-Business Marketing
BUSI 3210 [0.5]	Personal Selling
BUSI 4201 [0.5]	Marketing Metrics
BUSI 4203 [0.5]	Marketing In Not-for-Profit Organizations
BUSI 4205 [0.5]	International Marketing Strategy
BUSI 4209 [0.5]	Consumer Culture Theory
BUSI 4219 [0.5]	Sustainability Marketing
BUSI 4229 [0.5]	Marketing in the Arts and Culture Sectors
BUSI 4331 [0.5]	Industry 4.0 Technologies and Applications
BUSI 4408 [0.5]	Social Analytics
Total Credits	4.5

Concentration in Supply Chain Management (4.5 credits)

1. 2.5 credits in:	2.5
BUSI 3301 [0.5]	Global Supply Chain Management
BUSI 3305 [0.5]	Distribution Channels and Logistics
BUSI 4302 [0.5]	Management of Quality
BUSI 4304 [0.5]	Procurement and Contracting
BUSI 4331 [0.5]	Industry 4.0 Technologies and Applications
2. 2.0 credits from:	2.0
BUSI 3208 [0.5]	Business-to-Business Marketing
BUSI 3400 [0.5]	Database Design
BUSI 3402 [0.5]	Systems Analysis and Design
BUSI 3706 [0.5]	International Business Negotiations
BUSI 4308 [0.5]	Simulation Modeling and Analytics
BUSI 4400 [0.5]	IS Management and Strategy
BUSI 4406 [0.5]	Business Analytics
BUSI 4408 [0.5]	Social Analytics
BUSI 4607 [0.5]	Management of Technology and Innovation
BUSI 4708 [0.5]	International Expansion and Operations
ECON 3600 [0.5]	Introduction to International Economics
LAWS 3208 [0.5]	International Trade Regulation
STAT 3503 [0.5]	Regression Analysis
STAT 3507 [0.5]	Sampling Methodology
Total Credits	4.5

Note: In Item 2 above, for further emphasis within this concentration, students may cluster courses in the following manners:

2a. E-Supply Chain Management:

BUSI 3208 [0.5]	Business-to-Business Marketing
BUSI 3400 [0.5]	Database Design
BUSI 3402 [0.5]	Systems Analysis and Design
BUSI 4301 [0.5]	Artificial Intelligence and Business Decision Models
BUSI 4309 [0.0]	Practicum in Supply Chain Management
BUSI 4400 [0.5]	IS Management and Strategy
BUSI 4607 [0.5]	Management of Technology and Innovation

2b. Supply Chain Management - Business Analytics:

BUSI 3400 [0.5]	Database Design
BUSI 4406 [0.5]	Business Analytics
BUSI 4408 [0.5]	Social Analytics
BUSI 4301 [0.5]	Artificial Intelligence and Business Decision Models
BUSI 4308 [0.5]	Simulation Modeling and Analytics
BUSI 4309 [0.0]	Practicum in Supply Chain Management
STAT 3503 [0.5]	Regression Analysis
STAT 3507 [0.5]	Sampling Methodology

2c. Global Supply Chain Management:

BUSI 3208 [0.5]	Business-to-Business Marketing
BUSI 3706 [0.5]	International Business Negotiations

BUSI 4301 [0.5]	Artificial Intelligence and Business Decision Models
BUSI 4309 [0.0]	Practicum in Supply Chain Management
BUSI 4708 [0.5]	International Expansion and Operations
ECON 3600 [0.5]	Introduction to International Economics
LAWS 3208 [0.5]	International Trade Regulation

Bachelor of Commerce (20.0 credits)

Enrolment in the Bachelor of Commerce program is restricted. Please consult with an academic advisor for more information.

A. Credits Included in the Major CGPA (11.5 credits):

1. 2.0 credits in:	2.0
BUSI 1004 [0.5]	Financial Accounting for Business Students
BUSI 1005 [0.5]	Managerial Accounting for Business Students
BUSI 1401 [0.5]	Foundations of Information Systems
BUSI 1800 [0.5]	Introduction to Business
2. 1.0 credits in:	1.0
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
3. 0.5 credit in:	0.5
MATH 1009 [0.5]	Mathematics for Business
4. 1.0 credits in:	1.0
PSYC 1002 [0.5]	Introduction to Psychology II
SOCI 1005 [0.5]	Sociology for Bachelor of Commerce Students
5. 4.0 credits in:	4.0
BUSI 2101 [0.5]	Organizational Behaviour
BUSI 2208 [0.5]	Introduction to Marketing
BUSI 2301 [0.5]	Introduction to Supply and Operations Management
BUSI 2401 [0.5]	Introduction to Data Analytics
BUSI 2504 [0.5]	Business Finance I
BUSI 2601 [0.5]	Business Law
BUSI 2701 [0.5]	Fundamentals of International Business
BUSI 2800 [0.5]	Entrepreneurship
6. 0.5 credits in:	0.5
STAT 2601 [0.5]	Business Statistics
7. 1.5 credits in:	1.5
BUSI 3102 [0.5]	Introduction to Human Resources Management
BUSI 3103 [0.5]	Introduction to Organization Theory
BUSI 3309 [0.5]	Project Management
8. 1.0 credits in:	1.0
BUSI 4601 [0.5]	Business Ethics
BUSI 4609 [0.5]	Strategic Management
9. 0.0 credits in:	0.0
Business Career Preparation Requirement	
BUSI 1995 [0.0]	Employability Passport I
BUSI 2995 [0.0]	Employability Passport II
BUSI 3995 [0.0]	Employability Passport III
BUSI 4995 [0.0]	Employability Passport IV

B. Credits Not Included in the Major CGPA (8.5 credits):

10. 8.5 credits in free electives	8.5
Total Credits	20.0

Notes:

- BUSI 4601 and BUSI 4609 in **Item 8** above must be taken at the Sprott School of Business.
- The following courses cannot be used as free electives toward the B.Com. degree: ESLA 1300, ESLA 1500, and any 0000-level course such as MATH 0009 and MATH 0107.
- Students may not continue into 3000-level or higher BUSI courses unless the following two minimum requirements are met: a) successful completion of BUSI 1800 and b) successful completion of BUSI 2800.
- Students require completion of BUSI 1995 to be eligible for registration in BUSI 2101, completion of BUSI 2995 to be eligible for registration in BUSI 3309, and completion of BUSI 3995 to be eligible for registration in BUSI 4609. BUSI 4995 must be completed as part of the degree requirements prior to graduation from the Bachelor of Commerce.
- Students graduating with a Bachelor of Commerce are ineligible from receiving a concentration in Commerce, regardless of whether those concentration courses were completed successfully.

Bachelor of International Business (Honours)

Program Requirements

The Bachelor of International Business (B.I.B.) program is characterized by the requirement that students spend third year in studies abroad.

Students in the B.I.B. program are required to specialize in one of the following languages: French, German, Japanese, Mandarin, or Spanish.

Language Training Component

Students may select French, German, Japanese, Mandarin, or Spanish as their specialization language for study.

Applicants to the program interested in languages other than those listed above should contact the Eric Sprott School of Business Supervisor of Undergraduate Programs to verify if the preferred language option may have become available after the publication of this calendar.

All first year Bachelor of International Business students will be assessed for ability in their selected language by the relevant language unit and placed in the appropriate courses as authorized by the language unit, unless a student fully tests out of a language (see note 5 below).

Students with some ability in their selected language may be allowed to pursue studies in that language on the understanding that they will effect a significant improvement in their ability.

The Year Abroad

The Year Abroad Requirement of the B.I.B. program is met by the successful completion of a minimum of 4.0 approved credits during the year of study abroad (this includes BUSI 3700 Cross-cultural Communication), with a minimum of 1.0 credit taught in the chosen language for the program. The B.I.B. student will study at one of Carleton's approved Exchange partner institutions, as a full-time student on Exchange for one academic year. Students could alternatively complete the Year Abroad Requirement of the B.I.B program by two other means;

1) the successful completion of a minimum of 2.0 approved credits during the year of study abroad (this includes BUSI 3700 Cross-cultural Communication), with a minimum of 0.5 credits taught in the chosen language for the program, along with a minimum 12 week pre-approved internship (BUSI 3701 Practicum in International Business I) in that country.

OR

2) the successful completion of a minimum 24 week pre-approved internship in a country where the language is spoken (BUSI 3701 Practicum in International Business I and BUSI 3702 Practicum in International Business II), along with the completion of BUSI 3700 Cross-cultural Communication.

Students who fully test out of one of the B.I.B. required languages will be eligible to spend their third year abroad in a country where one of Carleton's approved Exchange partner institutions exists. A student's country of origin is not an eligible country for their third year abroad unless approved by the School of Business.

In order to be eligible to participate in the year abroad, students must meet the following requirements:

- At the time of application, students must have achieved a minimum Major CGPA of 6.50.
- At the time of their pre-departure ACE, students must have:
 - successfully completed a minimum of 9.0 credits, including a minimum of 5.0 credits in the Major and all pre-departure requirements in the chosen B.I.B. language (French/German/Japanese/Mandarin/Spanish);
 - a minimum Major CGPA of 6.50;
 - a minimum Language CGPA of 6.50, if applicable based on placement.

The number of courses available in English in foreign schools may vary. Carleton credits commensurate to courses taken abroad will be determined by the Registrar's Office and awarded towards the student's degree.

Students are responsible for all traveling, living and incidental costs for fulfilling third-year requirements abroad. Tuition fees and compulsory miscellaneous fees will be paid to Carleton University according to Carleton University's fee structure. The student may be liable for compulsory miscellaneous fees assessed by the foreign institution, including possible fees for language courses.

A limited number of bursaries are available to offset costs. For details on how to apply for a bursary, contact the Awards Office.

Bachelor of International Business Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 2.0 credits in:	2.0
BUSI 1004 [0.5]	Financial Accounting for Business Students
BUSI 1005 [0.5]	Managerial Accounting for Business Students
BUSI 1401 [0.5]	Foundations of Information Systems
BUSI 1701 [0.5]	Introduction to International Business
2. 2.0 credits in:	2.0
MATH 1009 [0.5]	Mathematics for Business
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
STAT 2601 [0.5]	Business Statistics
3. 2.5 credits in:	2.5
BUSI 2208 [0.5]	Introduction to Marketing
BUSI 2301 [0.5]	Introduction to Supply and Operations Management
BUSI 2504 [0.5]	Business Finance I
BUSI 2702 [0.5]	Introduction to International Management
BUSI 3700 [0.5]	Cross-cultural Communication
4. 1.0 credit in (See Note 1, below):	1.0
BUSI 4705 [0.5]	Ethics and Cross-cultural Interaction
BUSI 4709 [0.5]	Strategic Management for International Business (See Note, below)
5. 1.5 credits from (See Note 2, below):	1.5
BUSI 3703 [0.5]	International and Comparative Management
BUSI 3704 [0.5]	The Environment of International Business
BUSI 3706 [0.5]	International Business Negotiations
BUSI 4707 [0.5]	Regionalism and Globalization
BUSI 4710 [0.5]	International New Ventures
BUSI 4717 [0.5]	Managing Globalization in Emerging Economies
- An approved 3000-level or higher course in International Business taken during the year abroad at one of Carleton's approved exchange partner institutions	
6. 1.5 credits in (See Note 3, below):	1.5
BUSI/ECON at the 2000-level or above	
7. 1.0 credit in:	1.0
BUSI at the 3000-level or above (except for BUSI 3701 and BUSI 3702)	
8. 1.0 credits in BUSI at the 4000-level	1.0
B. Credits Included in the Core CGPA (4.0 credits)	
9. 4.0 credits in one of French, German, Japanese, Mandarin, or Spanish	4.0
C. Credits Not Included in the Major or Core CGPA (3.5 credits):	

10. **3.5 credits** in free electives (see Notes 4 and 6, below) 3.5

Total Credits 20.0

Notes:

1. For **Item 4** above, BUSI 4705 and BUSI 4709 must be taken at the Sprott School of Business.
2. For **Item 5** above:
 - a) Students **without a Concentration** must choose 2.5 credits from the list in Item 5.
 - b) Students in **Concentration in International Marketing and Trade** must choose among BUSI 3706, BUSI 4707, BUSI 4710 and BUSI 4717 from the list in Item 5.
 - c) Students in **Concentration in International Strategy and Human Resources Management** must choose among BUSI 3704, BUSI 3706, BUSI 4710 and BUSI 4717 from the list in Item 5.
 - d) Students in **Concentration in Global Financial Management and Systems** must choose among BUSI 3704, BUSI 4707, BUSI 4710 and BUSI 4717 from the list in Item 5.
3. For **Items 6, 7, and 8** above, students **without a Concentration** must satisfy these requirements:
 - a) 1.0 credit from all courses listed in Item 1 of all Concentrations
 - b) 1.0 credit from all courses listed in Item 2 of all Concentrations
 - c) 1.0 credit from all courses listed in Item 3 of all Concentrations
4. The following courses cannot be used as free electives toward the B.I.B. degree: ESLA 1300, ESLA 1500, any course at the 0000-level including MATH 0007 (no longer offered), MATH 0107, and MATH 0009.
5. For **Item 9** above, students who successfully meet some or all of the language requirements through alternative testing will choose up to 4.0 elective credits approved by Sprott. Students who test out will not receive an ACE based in their Language Core CGPA.
6. For **Item 10** above, students may use BUSI 3701 and BUSI 3702 towards their free electives if they successfully complete an internship while abroad.
7. Students require completion of BUSI 1996 and BUSI 1997 to be eligible for registration in BUSI 2702, and completion of BUSI 2996 and BUSI 2997 to be eligible for the year abroad. BUSI 4996 must be completed as part of the degree requirements prior to graduation from the Bachelor of International Business (Honours).

Concentrations in the B.I.B. Program

Concentrations described below are open to students registered in the B.I.B. program. Students enrolled in a concentration must satisfy the requirements for Bachelor of International Business (above) while gaining credit for the requirements of the Concentration through appropriate choice of courses. The order in which the courses listed for the Concentrations are taken should be planned in advance. Students are therefore strongly advised to

consider their concentration choices by the end of their first year.

Courses taken at a foreign university during the year abroad must correspond to those below or, if different, be subject to evaluation and approval by the Eric Sprott School of Business.

Concentration in International Marketing and Trade (4.0 credits)

1. 2.0 credits in:	2.0
BUSI 3705 [0.5] International Buyer Behaviour	
BUSI 4205 [0.5] International Marketing Strategy	
BUSI 4708 [0.5] International Expansion and Operations	
ECON 3601 [0.5] Introduction to International Trade	
2. 1.0 credit from:	1.0
BUSI 3204 [0.5] Digital Marketing	
BUSI 3205 [0.5] Marketing Communications	
BUSI 3207 [0.5] Marketing Research	
BUSI 3208 [0.5] Business-to-Business Marketing	
BUSI 3209 [0.5] Consumer Behaviour	
BUSI 4203 [0.5] Marketing In Not-for-Profit Organizations	
BUSI 4208 [0.5] Marketing Management	
BUSI 4209 [0.5] Consumer Culture Theory	
BUSI 4229 [0.5] Marketing in the Arts and Culture Sectors	
0.5 credit of approved 3000-level or higher non-international course(s) in Marketing taken during the year abroad at one of Carleton's approved exchange partner institutions	
3. 1.0 credit from:	1.0
ECON 3602 [0.5] International Monetary Problems	
ECON 3807 [0.5] European Economic Integration	
ECON 3808 [0.5] The Economics of Transition	
ECON 3870 [0.5] Comparative Economic Systems	
ECON 4508 [0.5] International Aspects of Economic Development	
ECON 4601 [0.5] International Trade Theory and Policy	
ECON 4602 [0.5] International Monetary Theory and Policy	
GEOG 2200 [0.5] Global Connections	
GEOG 2300 [0.5] Space, Place and Culture	
GEOG 3404 [0.5] Geographies of Economic Development	
LAWS 3207 [0.5] International Transactions	
LAWS 3208 [0.5] International Trade Regulation	
PSCI 2601 [0.5] International Relations: Global Politics	
PSCI 2602 [0.5] International Relations: Global Political Economy	
PSCI 3600 [0.5] International Institutions	
1.0 credit of approved 2000-level or higher international non-business course(s) taken during the year abroad at one of Carleton's approved exchange partner institutions	
Total Credits	4.0

Concentration in International Strategy and Human Resources Management (4.0 credits)

1. 2.0 credits in:	2.0
BUSI 3703 [0.5]	International and Comparative Management
BUSI 4706 [0.5]	International Human Resource Management
BUSI 4707 [0.5]	Regionalism and Globalization
ECON 3601 [0.5]	Introduction to International Trade
2. 1.0 credit in:	1.0
BUSI 3102 [0.5]	Introduction to Human Resources Management
BUSI 3103 [0.5]	Introduction to Organization Theory
BUSI 3106 [0.5]	Managing Conflict and Negotiation
BUSI 3117 [0.5]	Developing Creative Thinking
BUSI 3119 [0.0]	Business and Environmental Sustainability
BUSI 4104 [0.5]	Strategic Human Resources Management
BUSI 4105 [0.5]	Managing Change
BUSI 4108 [0.5]	Organizational Learning
BUSI 4112 [0.5]	Organizational Leadership
BUSI 4117 [1.0]	Creative Thinking
BUSI 4129 [0.5]	Managing the Arts
0.5 credit of approved 3000-level or higher non-international course(s) in Management taken during the year abroad at one of Carleton's approved exchange partner institutions	
3. 1.0 credit from:	1.0
ECON 3360 [0.5]	Introduction to Labour Economics
ECON 3602 [0.5]	International Monetary Problems
ECON 3807 [0.5]	European Economic Integration
ECON 3808 [0.5]	The Economics of Transition
ECON 3870 [0.5]	Comparative Economic Systems
ECON 4508 [0.5]	International Aspects of Economic Development
ECON 4601 [0.5]	International Trade Theory and Policy
ECON 4602 [0.5]	International Monetary Theory and Policy
PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3600 [0.5]	International Institutions
PSCI 3703 [0.5]	Governing in the Global Economy
1.0 credit of 2000-level or higher international non-business course(s) taken during the year abroad at one of Carleton's approved exchange partner institutions	
Total Credits	4.0

Concentration in Global Financial Management and Systems (4.0 credits)

1. 2.0 credits in:	2.0
BUSI 4504 [0.5]	International Finance
BUSI 4505 [0.5]	Global Financial Markets and Institutions
BUSI 4515 [0.5]	Micro Finance
ECON 3602 [0.5]	International Monetary Problems

2. 0.5 credit in:	0.5
BUSI 3512 [0.5]	Derivatives
3. 0.5 credit from:	0.5
0.5 credit of approved 3000-level or higher course(s) in Global Financial Management taken during the year abroad at one of Carleton's approved exchange partner institutions	
BUSI 3500 [0.5]	Applied Corporate Finance
BUSI 3502 [0.5]	Investments
4. 1.0 credit from:	1.0
BUSI 3500 [0.5]	Applied Corporate Finance (if not used toward Item 3, above)
BUSI 3502 [0.5]	Investments (If not used toward Item 3, above)
BUSI 4500 [0.5]	Advanced Corporate Finance
BUSI 4502 [0.5]	Portfolio Management
BUSI 4510 [0.5]	Mergers and Acquisitions
BUSI 4511 [0.5]	Fixed Income Analysis
ECON 3360 [0.5]	Introduction to Labour Economics
ECON 3601 [0.5]	Introduction to International Trade
ECON 3807 [0.5]	European Economic Integration
ECON 3808 [0.5]	The Economics of Transition
ECON 3870 [0.5]	Comparative Economic Systems
ECON 4508 [0.5]	International Aspects of Economic Development
ECON 4601 [0.5]	International Trade Theory and Policy
ECON 4602 [0.5]	International Monetary Theory and Policy
PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3600 [0.5]	International Institutions
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 4603 [0.5]	Analysis of International Political Economy
PSCI 4604 [0.5]	Selected Problems in International Political Economy
PSCI 4805 [0.5]	Political Economy of Global Money and Finance
1.0 credit of approved 2000-level or higher course(s) in International non-business taken during the year abroad at one of Carleton's approved exchange partner institutions	
Total Credits	4.0

Stream in Business Analytics (2.0 credits)

Available to students in the B.Com. or B.I.B. programs only, except those in the B.Com. or B.I.B. with the Concentration in Business Analytics.

1. 2.0 credits in:	2.0
STAT 2602 [0.5]	Statistical Models for Business Analytics and Finance
BUSI 3400 [0.5]	Database Design
BUSI 3406 [0.5]	Business Analytics Principles
BUSI 4407 [0.5]	Business Analytics Methods
Total Credits	2.0

Stream in Entrepreneurship (2.0 credits)

Available to students in the B.Com. or B.I.B. programs only, except those in the B.Com. or B.I.B. with the Concentration in Entrepreneurship.

1. 2.0 credits in:	2.0
BUSI 3600 [0.5] Entrepreneurial Strategies	
BUSI 3810 [0.5] Business Development	
BUSI 3820 [0.5] Practicum in Business Design	
BUSI 4810 [0.5] Practicum in Business Creation	
Total Credits	2.0

Stream in Sustainability (2.0 credits)

Available to students in the B.Com. or B.I.B. programs only.

1. 2.0 credits in:	2.0
BUSI 2819 [0.5] Sustainability Accounting and Social Finance	
BUSI 3119 [0.0] Business and Environmental Sustainability	
BUSI 4120 [0.5] Environmental Sustainability Management	
BUSI 4219 [0.5] Sustainability Marketing	
Total Credits	2.0

Minor in Arts Management (4.5 credits)

Only students pursuing undergraduate programs (except B.Com. and B.I.B.) requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degrees with a minimum overall GPA of 7.00 may be admitted to the Minor in Arts Management.

Students who are required to leave the minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 5.00 or higher at graduation in order to be awarded a Minor in Arts Management.

Requirements:

1. 3.5 credits in:	3.5
BUSI 1003 [0.5] Survey of Accounting	
BUSI 2121 [0.5] Introduction to Organizational Behaviour	
BUSI 2204 [0.5] Basic Marketing	
BUSI 2503 [0.5] Introduction to Finance	
BUSI 2800 [0.5] Entrepreneurship	
BUSI 4129 [0.5] Managing the Arts	
BUSI 4229 [0.5] Marketing in the Arts and Culture Sectors	
2. 0.5 credit from:	0.5
BUSI 1401 [0.5] Foundations of Information Systems	
BUSI 1402 [0.5] Introduction to Business Information and Communication Technologies	
BUSI 2301 [0.5] Introduction to Supply and Operations Management	
BUSI 2400 [0.5] Foundations of Information Systems	

BUSI 3102 [0.5] Introduction to Human Resources Management	
BUSI 3104 [0.5] Managing Individual Performance	
BUSI 3105 [0.5] Managing and Motivating Teams	
BUSI 3106 [0.5] Managing Conflict and Negotiation	
BUSI 3117 [0.5] Developing Creative Thinking	
BUSI 3204 [0.5] Digital Marketing	
BUSI 3205 [0.5] Marketing Communications	
BUSI 3810 [0.5] Business Development	
BUSI 3820 [0.5] Practicum in Business Design	
BUSI 4205 [0.5] International Marketing Strategy	
BUSI 4112 [0.5] Organizational Leadership	
3. 0.5 credit from:	0.5
ARTH 3705 [0.5] Selected Museum Exhibition	
ARTH 4705 [0.5] Seminar: Selected Museum Exhibition	
FILM 2101 [0.5] The Film Industry	
MUSI 3403 [0.5] Music Industries	
- or an additional 0.5 credit BUSI from the list in Item 2, above	
4. The remaining requirements of the major discipline and degree must be satisfied.	
Total Credits	4.5

Minor in Business (4.0 credits)

Only students pursuing undergraduate programs (except B.Com. and B.I.B.) requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to Minor in Business.

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 5.00 or higher at graduation in order to be awarded a Minor in Business.

Requirements

1. 1.0 credit from:	1.0
BUSI 1003 [0.5] Survey of Accounting and 0.5 credit in BUSI at the 2000-level or	
BUSI 1001 [0.5] Principles of Financial Accounting	
BUSI 1002 [0.5] Management Accounting	
2. 2.0 credits in:	2.0
BUSI 1401 [0.5] Foundations of Information Systems or BUSI 2400 [0.5] Foundations of Information Systems	
BUSI 2121 [0.5] Introduction to Organizational Behaviour	
BUSI 2204 [0.5] Basic Marketing	
BUSI 2503 [0.5] Introduction to Finance	
3. 1.0 credit in BUSI at the 2000-level or higher	1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Minor in Business for Bachelor of Engineering (4.0 credits)

Only students pursuing undergraduate Bachelor of Engineering programs who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 5.00 may be admitted to Minor in Business for Bachelor of Engineering.

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 5.00 or higher at graduation in order to be awarded a Minor in Business for Bachelor of Engineering.

Requirements:

1. 2.5 credits in:	2.5
BUSI 1003 [0.5] Survey of Accounting	
BUSI 2121 [0.5] Introduction to Organizational Behaviour	
BUSI 2204 [0.5] Basic Marketing	
BUSI 2301 [0.5] Introduction to Supply and Operations Management	
BUSI 2503 [0.5] Introduction to Finance	
2. 1.5 credits from:	1.5
BUSI 1401 [0.5] Foundations of Information Systems	
BUSI 2400 [0.5] Foundations of Information Systems	
BUSI 2703 [0.5] Introduction to International Business	
BUSI 2800 [0.5] Entrepreneurship	
BUSI 3103 [0.5] Introduction to Organization Theory	
BUSI 3309 [0.5] Project Management	
BUSI 4105 [0.5] Managing Change	
3. The remaining requirements of the major discipline(s) must be satisfied.	
Total Credits	4.0

Minor in Business (Entrepreneurship) (4.0 credits)

Only students pursuing an undergraduate program (except B.Com. and B.I.B.) requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degree with a minimum Overall CGPA of 7.00 may be admitted to the Minor in Business (Entrepreneurship).

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 5.00 or higher at graduation in order to be awarded a Minor in Business (Entrepreneurship).

Requirements

1. 1.0 credit in:	1.0
BUSI 1800 [0.5] Introduction to Business	
BUSI 2800 [0.5] Entrepreneurship	
2. 2.0 credits in:	2.0
BUSI 3600 [0.5] Entrepreneurial Strategies	

BUSI 3810 [0.5] Business Development	
BUSI 3820 [0.5] Practicum in Business Design	
BUSI 4810 [0.5] Practicum in Business Creation	
3. 1.0 credit in BUSI at the 2000-level or higher	1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Minor in Business (Sustainability) (4.0 credits)

Only students pursuing an undergraduate program (except B.Com. and B.I.B.) requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degree with a minimum Overall CGPA of 7.00 may be admitted to the Minor in Business (Sustainability).

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 5.00 or higher at graduation in order to be awarded a Minor in Business (Sustainability).

Requirements

1. 1.0 credit in:	1.0
BUSI 1800 [0.5] Introduction to Business	
BUSI 2800 [0.5] Entrepreneurship	
2. 2.0 credits in:	2.0
BUSI 2819 [0.5] Sustainability Accounting and Social Finance	
BUSI 3119 [0.0] Business and Environmental Sustainability	
BUSI 4120 [0.5] Environmental Sustainability Management	
BUSI 4219 [0.5] Sustainability Marketing	
3. 1.0 credit in BUSI at the 2000-level or higher	1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Minor in Human Resources and Management for B.A. Honours Psychology (5.0 credits)

Only students pursuing Bachelor of Arts Honours with a Major in Psychology who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to Minor in Human Resources and Management. Students must successfully complete PSYC 2801 prior to entry in to the Minor, with a minimum grade of B+. PSYC 3801 must be successfully completed prior to taking any of the 4000-level BUSI courses listed in the Minor. Enrolment is limited.

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 6.50 or higher at graduation in order to be awarded a Minor in Human Resources and Management for B.A. Honours Psychology.

Requirements

1. 1.0 credits in:	1.0
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PSYC 2801 [0.5]	Organizational Psychology I	
PSYC 3801 [0.5]	Organizational Psychology II	
2. 1.0 credits in:		1.0
BUSI 3102 [0.5]	Introduction to Human Resources Management	
BUSI 3103 [0.5]	Introduction to Organization Theory	
3. 2.0 credits from:		2.0
BUSI 3104 [0.5]	Managing Individual Performance	
BUSI 3105 [0.5]	Managing and Motivating Teams	
BUSI 3106 [0.5]	Managing Conflict and Negotiation	
BUSI 4104 [0.5]	Strategic Human Resources Management	
BUSI 4105 [0.5]	Managing Change	
BUSI 4112 [0.5]	Organizational Leadership	
4. 0.5 credit in:		0.5
BUSI 2204 [0.5]	Basic Marketing	
5. 0.5 credit from:		0.5
BUSI 2800 [0.5]	Entrepreneurship	
BUSI 3209 [0.5]	Consumer Behaviour	
Total Credits		5.0

Post-Baccalaureate Diploma in Accounting (4.5 credits)

Normally, students are required to have completed an undergraduate degree with a minimum B- average or higher, and have completed BUSI 1004 and BUSI 1005 (or equivalent) with a grade of C or higher in each course. Note: BUSI 1004 and 1005 must have been completed within the last 10 years to be considered as prerequisites for this program.

Requirements:

1. 4.5 credits in:		4.5
BUSI 2001 [0.5]	Intermediate Accounting I	
BUSI 2002 [0.5]	Intermediate Accounting II	
BUSI 2005 [0.5]	Income Tax Fundamentals	
BUSI 2503 [0.5]	Introduction to Finance	
BUSI 3001 [0.5]	Accounting for Business Combinations	
BUSI 3007 [0.5]	Auditing I	
BUSI 3008 [0.5]	Intermediate Management Accounting and Control	
BUSI 3629 [0.5]	Corporate Governance and Strategy	
BUSI 4008 [0.5]	Advanced Management Accounting and Control	
Total Credits		4.5

Regulations

In addition to the program requirements described here, students must satisfy the University regulations (see the *Academic Regulations of the University* section of this Calendar).

Students should consult with the School when planning their program and selecting courses.

Courses Used Towards Streams

Any courses completed toward the fulfilment of a Stream offered by the Sprott School of Business cannot be counted toward the fulfilment of any additional Stream(s),

or toward any Concentration, offered by the Sprott School of Business.

Bachelor of Commerce

Students may not continue into 3000-level or higher BUSI courses unless the following two minimum requirements are successfully met:

1. Successful completion of BUSI 1800; and,
2. Successful completion of BUSI 2800.

Graduation (B.Com. and B.I.B.)

Bachelor of Commerce

- A B.Com. (Honours) student who meets all of the Overall CGPA requirement of 5.0, the Major CGPA graduation requirement of 6.5, and the Concentration CGPA graduation requirement of 6.5 will graduate with B.Com. Honours with a concentration notation
- A B.Com. (Honours) student who meets both the Overall CGPA requirement of 5.0 and the Major CGPA graduation requirement of 6.5, but not the Concentration CGPA graduation requirement of 6.5 will graduate with B.Com. Honours without a concentration notation
- A B.Com. (Honours) student who meets the Overall CGPA graduation requirement of 5.0 and a Major CGPA of 5.0, regardless of the Concentration CGPA will graduate with B.Com. with neither a concentration nor an Honours notation

Bachelor of International Business

- A B.I.B. student who meets all of the Overall CGPA requirement of 5.0, the Major CGPA requirement of 6.5, the Core CGPA requirements of 6.5, and the Concentration CGPA requirement of 6.5 will graduate with B.I.B. Honours with a concentration notation
- A B.I.B. student who meets the Overall CGPA requirement of 5.0, the Major CGPA requirement of 6.5 and Core CGPA requirement of 6.5, but not the Concentration CGPA requirement of 6.5 will graduate with B.I.B. Honours without a concentration notation
- A B.I.B. student who meets the Overall CGPA requirement of 5.0 but not the Major CGPA requirement of 6.5 or the Core CGPA requirement of 6.5 is eligible to transfer through Admissions Services to the B.Com. with neither a concentration nor an Honours notation and will then follow the appropriate graduation path as laid out in the B.Com. requirements. See admissions.carleton.ca for more details.

Academic Continuation Evaluation for Bachelor of International Business

Students in B.I.B. are Honours students.

Students in the Bachelor of International Business follow the Academic Continuation Evaluation (ACE) regulations governing Honours programs (see Section 3.2 of the *Academic Regulations of the University*), with the following additions and amendments.

The B.I.B. defines a Language Core consisting of the required 4.0 credits in the language of specialization.

10.5 credits through completion:

- At each ACE assessment, B.I.B. students must meet the minimum Overall, Major, and Language Core CGPAs required for graduation. A B.I.B. student not meeting any one of the Overall, Major, or Language Core CGPA graduation requirements will be required to leave the B.I.B. program with the decision *Continue in Alternate* (CA). Note that if the student meets the minimum requirements to be *Eligible to Continue* (EC) as per progression requirements in the B.Com. (Honours), the student is eligible to transfer through Admissions Services. See admissions.carleton.ca for more details. The student will then follow the appropriate continuation path as laid out in the B.Com. (Honours) requirements.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Commerce Honours: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have a major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher;
2. Successfully completed 6.0 credits in the major and have at least 6.0 credits remaining for completion of the B.Com. program prior to their first work term;
3. Registered as a full-time student in the Bachelor of Commerce program.

To obtain the co-op designation students must successfully complete three (3) work terms.

Co-op Work Term Course: BUSI 3999

Work/Study Patterns:

Accounting

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	W*	Winter	
Summer		Summer	W/S	Summer	W	Summer	S		

Entrepreneurship

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	
Summer		Summer	W/S	Summer	W/S	Summer	W*		

Finance, International Business, Marketing, Supply Chain, and students without a concentration

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	
Summer		Summer	W	Summer	W	Summer	W*		

Information Systems, Management

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	W*
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer	W/S	Summer	W	Summer	W*		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and**

Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Commerce (B.Com.) (Honours)
- Bachelor of Commerce (B.Com.)

Admission Requirements

First Year

Bachelor of Commerce (B.Com.) (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English (or *anglais*), Advanced Functions, and Calculus and Vectors.

Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Bachelor of Commerce (B.Com.)

No direct entry; access is restricted.

Advanced Standing

Bachelor of Commerce (B.Com.) (Honours)

Applications for admission to the second or subsequent years will be assessed on their merits. Students must present a major CGPA of 6.50 (C+/B-) or higher, and an overall CGPA of 8.00 (B) or higher. Advanced standing will be granted only for those courses that are determined to be appropriate.

Current Carleton students may also be assessed for admission to second and subsequent years if they present BUSI 1001 and BUSI 1002 with an average of 8.0 or higher (with no individual grade below C+) and a Major CGPA of 6.50 (C+/B-) or higher.

Applications by B.I.B. (Honours) students for admission to the second or subsequent years of B.Com. (Honours) will be assessed on their merits. Students must present a Major CGPA and an Overall CGPA consistent with the Academic Continuation Evaluation requirements for B.Com. (Honours) students. Advanced standing will be granted for those courses determined to be appropriate.

Bachelor of Commerce (B.Com.)

No direct entry. Access is restricted to students in the Bachelor of Commerce (Honours) and Bachelor of International Business (Honours). (See Regulations for Business.)

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Commerce (Honours) program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the

number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of International Business (B.I.B.) (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include English (or *anglais*), Advanced Functions, and Calculus and Vectors. Applicants who do not present with Calculus and Vectors must successfully complete MATH 0009 at Carleton in the Fall semester of first year in order to be eligible to continue.

Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Advanced Standing

Applications for admission to second and subsequent years will be assessed on their merits, subject to available spaces. Advanced standing will be granted only for those courses that are determined to be appropriate. Students must present an Overall CGPA of 8.00 (equivalent to B average) or better.

Applications by B.Com. (Honours) students for admission to the second or subsequent years of B.I.B. will be assessed on their merits. Students must present a major CGPA and an overall CGPA consistent with the Academic Continuation Evaluation requirements for B.I.B. students.

Advanced standing will be granted only for those courses determined to be appropriate.

The design of the B.I.B. program is premised on a full year of study abroad (at third year) after the preparations leading to it are successfully completed at Carleton. Students who are admitted with advanced standing may need to delay their study abroad requirement until first- and second-year curricula are completed, and consequently delay graduation.

Some transferred credits (normally electives) may have to be forfeited in order to meet the third-year Study Abroad Requirement of a minimum 4.0 credits completed during year abroad.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma

• Post-Baccalaureate Diploma in Accounting

Normally, students are required to have completed an undergraduate degree with a minimum B- average or higher, and have completed BUSI 1004 and BUSI 1005 (or equivalent) with a grade of C or higher.

Business (BUSI) Courses

Notes:

1. Some Business courses are open to students in select programs only. Please refer to the current BUSI Course Priority List found at: sprott.carleton.ca/registration
2. B.Com. and B.I.B. students should use Business (BUSI) prefix for registering in courses that are cross-listed.
3. Not all courses listed are offered in a given year; consult the class schedule at central.carleton.ca for a list of current course offerings.

BUSI 1001 [0.5 credit]

Principles of Financial Accounting

Discussion of the concepts of asset valuation and income measurement underlying the preparations and interpretation of financial statements.

Precludes additional credit for BUSI 1003 and BUSI 1004.

Prerequisite(s): second-year standing, or permission of the Sprott School of Business.

Lecture three hours a week.

BUSI 1002 [0.5 credit]

Management Accounting

An introduction to the use of accounting data for the purposes of planning and control of operations.

Precludes additional credit for BUSI 1003 and BUSI 1005.

Prerequisite(s): second-year standing and BUSI 1001, or permission of the Sprott School of Business.

Lecture three hours a week.

BUSI 1003 [0.5 credit]

Survey of Accounting

Introduction to accounting information, the basic accounting cycle, and consideration of selected financial statement topics. Analysis of cost behavior and the uses and limitations of accounting information in planning, controlling and decision-making processes.

Precludes additional credit for BUSI 1001, BUSI 1002, BUSI 1004 and BUSI 1005. No credit for students in B.Com., BIB or B.Econ. (Honours Economics, Concentration in Financial Economics).

Lecture three hours a week.

BUSI 1004 [0.5 credit]

Financial Accounting for Business Students

Introduction to accounting for business organizations. The student will be introduced to the accounting process and the preparation and analysis of the balance sheet, income statement, and cash flow statement.

Precludes additional credit for BUSI 1001 and BUSI 1003.

Prerequisite(s): BUSI 1701 or BUSI 1800. Restricted to B.Com. and B.I.B. students.

Lectures three hours a week.

BUSI 1005 [0.5 credit]

Managerial Accounting for Business Students

Introduction to the development and use of accounting information within a business organization for effective management including: planning, directing, motivating, and controlling activities and behaviours.

Precludes additional credit for BUSI 1002 and BUSI 1003.

Prerequisite(s): BUSI 1004. Restricted to B.Com. and B.I.B. students.

Lectures three hours a week.

BUSI 1401 [0.5 credit]**Foundations of Information Systems**

This course helps student to understand the critical role of information systems in organizations and their impact on social and ethical issues. Covers fundamental tools and skills for the development and management of information systems and business analytics in organizations.

Precludes additional credit for BUSI 2400.

Lecture three hours a week.

BUSI 1402 [0.5 credit]**Introduction to Business Information and Communication Technologies**

Introduction to ICT in organizations. Topics may include spreadsheets, databases, statistical software, website design and implementation, collaboration software including wikis, blogs and social networking, GPS, m-Commerce.

Lectures three hours a week.

BUSI 1701 [0.5 credit]**Introduction to International Business**

Introduction to the principles and practices of international business. Topics include the impact of culture and the political, economic, and legal systems on global strategy, international institutions, theories of cross-border trade, and the characteristics and effects of regional trade blocs. Precludes additional credit for BUSI 2701, BUSI 2703.

Prerequisite(s): restricted to B.I.B. students.

Lecture three hours and tutorial one hour a week.

BUSI 1800 [0.5 credit]**Introduction to Business**

Introduction to contemporary businesses in a complex economy, their role in the society, their history. The various functions that come together to define a business will be examined. All forms of business communications emphasized.

Lectures three hours and tutorial one hour a week.

BUSI 1801 [0.5 credit]**Foundations of Business**

Introduction to contemporary businesses in a complex economy and their role in the society. An overview of the various functions that come together to define a business will be examined.

Precludes additional credit for BUSI 1800. No credit in B.Com. or B.I.B programs.

Lectures three hours a week.

BUSI 1995 [0.0 credit]**Employability Passport I**

An introduction to the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students registered in B.Com. or B.I.B.

Participation in employability events and initiatives throughout the year.

BUSI 1996 [0.0 credit]**Employability Passport BIB I**

An introduction to the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students registered in B.I.B. Participation in employability events and initiatives throughout the year.

BUSI 1997 [0.0 credit]**Employability Passport BIB I**

An introduction to the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students registered in B.I.B. Participation in employability events and initiatives throughout the year.

BUSI 2001 [0.5 credit]**Intermediate Accounting I**

An examination of accounting and reporting issues related primarily to asset valuation and revenue recognition.

Prerequisite(s): second-year standing, and BUSI 1004 or BUSI 1001 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 2002 [0.5 credit]**Intermediate Accounting II**

An examination of accounting and reporting issues related primarily to liabilities and equities.

Precludes additional credit for BUSI 2506.

Prerequisite(s): BUSI 2001, and BUSI 2504 or BUSI 2503 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 2005 [0.5 credit]**Income Tax Fundamentals**

A foundation course that aims to introduce the fundamental concepts of income tax laws and regulations as significant elements in the planning and decision making process of taxpayers and managers. Problems, issues and planning associated with the Income Tax Act are discussed.

Precludes additional credit for BUSI 3005 and BUSI 4005.

Prerequisite(s): BUSI 1001 or BUSI 1004 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 2101 [0.5 credit]**Organizational Behaviour**

Models of individual and small group behaviour in organizations. Topics include motivation, communication, job design, leadership and group dynamics to provide systematic explanations of employee and managerial behaviour in organizations.

Precludes additional credit for BUSI 2121, BUSI 2702, BUSI 3602.

Prerequisite(s): second-year standing. Restricted to B.Com. students.

Lectures three hours, and tutorial one and a half hours a week.

BUSI 2121 [0.5 credit]**Introduction to Organizational Behaviour**

Individual and small group behaviors in organizations and management of the same.

Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 3602.

Prerequisite(s): second-year standing.

Lecture three hours a week.

BUSI 2204 [0.5 credit]**Basic Marketing**

Basic problems and practices in marketing. Marketing planning tools and strategies of firms.

Precludes additional credit for BIT 2002 and BUSI 2208.

Lecture three hours a week.

BUSI 2208 [0.5 credit]**Introduction to Marketing**

Overview of the marketing function within the firm.

Introduction to key marketing concepts and principles; business environment analysis, strategic decision making (segmentation, targeting, positioning), marketing mix planning (product, price, place promotion). Analysis of marketing problems using cases and major project.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2204.

Prerequisite(s): BUSI 1004, ECON 1001 and ECON 1002 (or ECON 1000), and one of BUSI 1701, PSYC 1002, SOCI 1005.

Lecture three hours a week.

BUSI 2301 [0.5 credit]**Introduction to Supply and Operations Management**

Concepts, models, and managerial issues in planning, designing, operating and controlling systems across supply chains for the provision of goods and services. Emphasis on basic ideas and tools.

Precludes additional credit for BUSI 3300 (no longer offered).

Prerequisite(s): second-year standing. Restricted to selected Spratt programs.

Lecture three hours a week.

BUSI 2400 [0.5 credit]**Foundations of Information Systems**

This course helps student to understand the critical role of information systems in organizations and their impact on social and ethical issues. Covers fundamental tools and skills for the development and management of information systems and business analytics in organizations.

Lecture three hours a week.

BUSI 2401 [0.5 credit]**Introduction to Data Analytics**

This course prepares students to gather, manipulate, and clean data from a variety of sources within a programming environment. Students will be introduced to visual data exploration and the deployment of data-driven visual storytelling. Topics include: APIs, Data Science Programming, SQL, Relational/NoSQL databases, data visualization.

Prerequisite(s): BUSI 1401.

Lecture three hours a week.

BUSI 2402 [0.5 credit]**Business Applications Development**

Introduction to programming. Fundamentals of structured and object-oriented programming using an OO programming language. Treatment of objects, abstraction and inheritance, event-driven programming, iteration, sequence and selection. Consideration of algorithms for searching, sorting, string processing and numerical analysis. Emphasis on the development of business applications.

Precludes additional credit for COMP 1006 and COMP 1406.

Prerequisite(s): second-year standing.

Lecture three hours and tutorial one hour a week.

BUSI 2503 [0.5 credit]**Introduction to Finance**

Basic issues and practices in finance. Survey of business firms' financing, investment, and payout decisions. Emphasis on understanding the principals, resources and trade-offs in the financial area of a business.

Precludes additional credit for BUSI 2504 and

ECON 3050. No credit for students in B.Com., BIB or B.Econ. (Honours Economics, Concentration in Financial Economics).

Prerequisite(s): second-year standing.

Lecture three hours a week.

BUSI 2504 [0.5 credit]**Business Finance I**

Business firms' financing, capital investment, and dividend policy decisions, cost of capital and short-term asset management problems.

Precludes additional credit for BUSI 2503, ECON 3050.

Prerequisite(s): BUSI 1005, and ECON 1001 and ECON 1002 (or ECON 1000) or ECOR 3800. Restricted to selected Spratt programs.

Lecture three hours and optional tutorial.

BUSI 2505 [0.5 credit]**Business Finance II**

Capital investment and financing decisions in the context of risk and return tradeoffs. Primary and derivative securities, and their role in risk management. Mergers, corporate restructuring, the theory of principal-agent relationships, and financial planning, forecasting, and control.

Prerequisite(s): BUSI 1002 or BUSI 1005, and BUSI 2504 (with a grade of C or higher in each), ECON 1001 and ECON 1002 (or ECON 1000), and MATH 1009 (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 2506 [0.5 credit]**Financial Statement Analysis**

Analysis and interpretation of an entity's financial statements and annual report from a user perspective. Ratio analysis is used to analyze firm performance and make forecasts of future performance.

Precludes additional credit for BUSI 2002.

Prerequisite(s): BUSI 2504 with a grade of C or higher.
Lectures three hours a week.

BUSI 2601 [0.5 credit]**Business Law**

The legal system and legal ordering as they affect those engaged in business activities. Emphasis on the law of tort, law of contract, agency and bailment, business associations (partnerships/proprietorships/corporations) and real estate.

Lecture three hours a week.

BUSI 2701 [0.5 credit]**Fundamentals of International Business**

Introduction to the context and operation of international business. Topics include international trade theory, trade agreements and blocs, international finance, global marketing, international human resource management and global strategy.

Precludes additional credit for BUSI 1701, BUSI 2703.

Prerequisite(s): BUSI 1800.

Lecture three hours a week.

BUSI 2702 [0.5 credit]**Introduction to International Management**

Applies principles of organizational behavior and organizational theory to the operations of international businesses. Includes discussion of appropriate strategies and structures. Introduces concepts of cross-cultural communication.

Precludes additional credit for BUSI 2101, BUSI 2121, BUSI 3602.

Prerequisite(s): second-year standing in B.I.B. and BUSI 1701.

Lectures three hours a week.

BUSI 2703 [0.5 credit]**Introduction to International Business**

Introduction to contemporary businesses in a complex economy, their role in society and their history. Examination of the various functions that come together to define a business with an emphasis on all forms of business communications.

Precludes additional credit for BUSI 1701, BUSI 2701.

Prerequisite(s): second-year standing. No credit for students in B.Com. or BIB.

Lectures three hours per week.

BUSI 2800 [0.5 credit]**Entrepreneurship**

Overview of the basics of entrepreneurship, with emphasis on idea generation and identification, team building, business models, initial strategies and feasibility. A number of organization types will be studied.

Prerequisite(s): Second-year standing.

Lecture three hours a week.

BUSI 2819 [0.5 credit]**Sustainability Accounting and Social Finance**

This course offers different avenues for in-depth explorations in sustainability accounting, impact measurement and social finance for undergraduate students. Each module covers a special topic within responsible business, such as impact measurement, responsible finance, impact investing, responsible and ESG investing, sustainability accounting.

Prerequisite(s): second-year standing.

Lecture three hours a week.

BUSI 2995 [0.0 credit]**Employability Passport II**

An intermediate course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 1995.

Participation in employability events and initiatives throughout the year.

BUSI 2996 [0.0 credit]**Employability Passport BIB II**

An intermediate course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 1996 and BUSI 1997.

Participation in employability events and initiatives throughout the year.

BUSI 2997 [0.0 credit]**Employability Passport BIB II**

An intermediate course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 1996 and BUSI 1997.

Participation in employability events and initiatives throughout the year.

BUSI 3001 [0.5 credit]**Accounting for Business Combinations**

Accounting problems associated with business combinations, with attention to the preparation of consolidated financial statements. Discussion may extend to financial reporting and diversified companies, reorganizations, etc. Selection of topics may vary from year to year.

Prerequisite(s): BUSI 2002 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3005 [0.5 credit]**Taxation I**

Federal income tax laws and regulations and their impact on an individual's financial and business decisions. Problems, issues and planning associated with the Income Tax Act and concerned with the computation of taxable income and taxes payable by an individual are discussed. Precludes additional credit for BUSI 2005.

Prerequisite(s): BUSI 2001 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3007 [0.5 credit]**Auditing I**

Auditing theory, methodology and application. Precludes additional credit for BUSI 4007 (no longer offered).

Prerequisite(s): BUSI 2001.
Lecture three hours a week.

BUSI 3008 [0.5 credit]**Intermediate Management Accounting and Control**

The use of accounting information for cost control and performance evaluation. Emphasis is on cost accumulation systems, performance evaluation, control models and analytical tools.

Prerequisite(s): BUSI 1002 or BUSI 1005 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3040 [0.5 credit]**Data Analytics and Information Systems for Accounting**

Data analysis in accounting, working with and making sense of big data using various data analysis tools. Specific topics include; data collection, cleaning, analyzing, visualization, and decision making in different areas of accounting.

Includes: Experiential Learning Activity
Prerequisite(s): BUSI 1401 or BUSI 2400, and BUSI 3007 with a grade of C- or higher in each.
Lecture three hours a week.

BUSI 3102 [0.5 credit]**Introduction to Human Resources Management**

Human Resource Management function in large formal organizations. Topics include human resources planning, recruitment, selection, performance evaluation, career development and training, compensation and benefits and the role of the professional personnel manager.

Prerequisite(s): second-year standing, and one of BUSI 2101, BUSI 2121, BUSI 2702, BUSI 3602, PSYC 2801.
Lectures three hours a week.

BUSI 3103 [0.5 credit]**Introduction to Organization Theory**

Macro-organization theory. Structuring of organizations in a complex global economy. Effects of the external environment, technology, culture and organizational goals on the structure, processes and effectiveness of the organization.

Prerequisite(s): second-year standing, and one of BUSI 2101, BUSI 2121, BUSI 2702, PSYC 2801.
Lectures three hours a week.

BUSI 3104 [0.5 credit]**Managing Individual Performance**

Managing the performance of self and others. Topics include self awareness, motivation, leadership, communication, diversity, and creativity. Extensive use is made of self-assessments and experiential learning. Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 3105 [0.5 credit]**Managing and Motivating Teams**

Principles of working in and managing teams. Topics include self-awareness, team formation, team development, team dynamics, team leadership and team motivation.

Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 (with a grade of C or higher in each).
Lecture three hours a week.

BUSI 3106 [0.5 credit]**Managing Conflict and Negotiation**

Analysis of the sources and forms of conflict and effective approaches to managing conflict. Exploration of the effectiveness of various strategies of negotiations.

Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 3117 [0.5 credit]**Developing Creative Thinking**

Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization).

Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C- or higher in each) or permission of the Sprott School of Business.

Lecture three hours a week.

BUSI 3204 [0.5 credit]**Digital Marketing**

Introduction and assessment of key new marketing tools and approaches, including internet marketing, relationship marketing, direct marketing; effective adoption and implementation of these tools and approaches across industries and organizations.

Prerequisite(s): BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3205 [0.5 credit]**Marketing Communications**

Promotion as communication process and marketing tool. Integrating advertising, direct/digital marketing, interactive media, sales promotion, public relations, personal selling through strategic planning (research, budgeting, organizing, creative and media strategy), execution, and campaign evaluation. Regulatory, ethical, social issues considerations.

Prerequisite(s): BUSI 2208 or BUSI 2204 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3207 [0.5 credit]**Marketing Research**

Concepts essential for understanding and conducting applied marketing research. Methods for collecting, analyzing, and interpreting data relevant to marketing decision-making. Experience in research techniques through case studies, exercises and project.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3100.

Prerequisite(s): BUSI 2204 or BUSI 2208 (with a grade of C or higher in each), STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3208 [0.5 credit]**Business-to-Business Marketing**

Theories and practice of marketing in business-to-business markets with emphasis on high technology businesses, including strategic marketing management, buyer behaviour and competitive analysis, sales management, new product management, and international issues.

Prerequisite(s): BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3209 [0.5 credit]**Consumer Behaviour**

Introduction to the application of psychological theories and methodologies to consumer behaviour. How consumer behaviour is shaped by internal influences.

Topics include perception, learning, memory, motivation, affect, personality, the self, attitudes and decision-making.

Precludes additional credit for BUSI 4206 (no longer offered).

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 3210 [0.5 credit]**Personal Selling**

Provides an introduction to and application of the principles of personal selling for persons pursuing any vocation, as well as those aspiring to careers in Marketing. Introduces basic concepts of professional selling including: customer analysis, communication skills, effective openings and closings, and customer relations.

Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C- or higher.

Lecture 3 hours a week.

BUSI 3301 [0.5 credit]**Global Supply Chain Management**

Introduction to management of global supply chain. Topics include strategies for planning and coordinating of all activities involved in procurement, conversion, and logistics in the global environment.

Precludes additional credit for BUSI 4303 (no longer offered).

Prerequisite(s): second-year standing, and BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3305 [0.5 credit]**Distribution Channels and Logistics**

In-depth examination of distribution channels and logistics; roles and interrelations in the achievement of marketing mix objectives and in creating competitive advantage. Channels design and management, managing logistics, warehousing, packaging and material handling, new trends in channels and logistics.

Prerequisite(s): third-year standing, and BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3308 [0.5 credit]**Simulation Modeling and Analytics**

Concepts of computer simulation for predictive and prescriptive analytics through case studies, worked examples and hands-on projects. Emphasizes static simulations with spreadsheets, discrete-event, and agent-based simulations with specialized software. Input modeling, model design, experimental design, analysis of outputs.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, and BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture two hours and tutorial two hours a week.

BUSI 3309 [0.5 credit]**Project Management**

Identification, selection, initiation, and organization of projects; risk assessment; project scheduling, performance monitoring and control, and termination. Emphases on foundations, principles and supporting techniques.

Prerequisite(s): third-year standing, and STAT 2601 or STAT 2606.

Lecture three hours a week.

BUSI 3400 [0.5 credit]**Database Design**

Information management, database administration, Entity-Relationship Model, database development life cycle: planning, analysis, design, implementation, and maintenance of database management systems. Construction of a database. Introduction to SQL, distributed databases, object-oriented databases, and data warehousing.

Precludes additional credit for COMP 3005.

Prerequisite(s): BUSI 1401 or BUSI 2400 (with a grade of C or higher in each).

Lecture three hours and tutorial one hour a week.

BUSI 3401 [0.5 credit]**Applications Development for Online Environments**

Analysis, design and implementation of electronic business systems. Topics include advanced object-oriented programming, advanced SQL programming, XML, using ASP.NET, MTS and SQL Server.

Precludes additional credit for BUSI 4401 (no longer offered).

Prerequisite(s): BUSI 2402 and BUSI 3400, or COMP 3005 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3402 [0.5 credit]**Systems Analysis and Design**

Methods of analysis of computer-based information systems. The systems development life cycle, planning, analysis, design, implementation and maintenance. Structured and object-oriented methods will be used. Use of a CASE tool.

Precludes additional credit for SYSC 3100, BUSI 3403, (no longer offered) and BUSI 3404 (no longer offered).

Prerequisite(s): one of BUSI 1401, BUSI 2400, COMP 2404, SYSC 2004 (with a grade of C or higher in each).

Lecture three hours and tutorials one hour a week.

BUSI 3405 [0.5 credit]**Enterprise Architecture**

Exploration of the significance of cross-functional business processes in the context of e-business transformation.

Includes process analysis and modeling techniques.

Also considers the application of enterprise resource planning systems, workflow technologies, intranets, and extranets to facilitate process flows inside and outside the organization.

Prerequisite(s): BUSI 1401 or 2400, and BUSI 3103 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3406 [0.5 credit]**Business Analytics Principles**

Evolution of Decision Support Systems. Decision Making. Business Intelligence. Foundation of Business Analytics. Lifecycle & Best Practices. Strategy, platforms and Architecture. Data Sensemaking. Model Development. Precludes additional credit for BUSI 4406.

Prerequisite(s): BUSI 2401 and STAT 2602.

Lecture 3 hours a week.

BUSI 3434 [0.5 credit]**Data Visualization**

Visual representation and presentation of data to facilitate understanding. This includes visual data exploration, perception, interpretation, and communication in exploratory and declarative situations. Practical skill development using current data visualization software.

Prerequisite(s): BUSI 2401, STAT 2602.

Lecture three hours a week.

BUSI 3500 [0.5 credit]**Applied Corporate Finance**

An examination of the major issues in corporate finance and applied financial management. Topics include: introduction to portfolio theory, the capital asset pricing model, cost of capital, capital structure and dividend policy, lease financing, capital budgeting under uncertainty, mergers and consolidations.

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3502 [0.5 credit]**Investments**

Procedures and methods of investment analysis. Stock and bond markets. Government regulation of securities markets. Valuation of common stocks and fixed income securities. Options, warrants, convertibles and commodities.

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3512 [0.5 credit]**Derivatives**

Derivative instruments and their use for speculation and hedging. Analysis of different markets where instruments trade, and their characteristics. Pricing models highlighted to determine how individuals and corporations can better manage risk; exotics and newer innovations.

Precludes additional credit for BUSI 4512 (no longer offered).

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3600 [0.5 credit]**Entrepreneurial Strategies**

Within the changing environment, an examination of entrepreneurial strategies related to different functional areas for new ventures and small businesses.

Prerequisite(s): BUSI 2800 with a grade of C- or higher.

Lecture three hours a week.

BUSI 3602 [0.5 credit]**Designing Organizational Systems: An Overview**

Key models and theories of organizational strategy, structure, processes, effectiveness, and individual and group behavior in organizations. Organizational structure, goals, and effectiveness; leadership, motivation and job design.

Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 2121. No credit for students in B.Com. or B.I.B. programs.

Prerequisite(s): third-year standing in the B.P.A.P.M. program.

Lecture three hours a week.

BUSI 3611 [0.5 credit]**Managing the Family Enterprise**

How family businesses are different, what makes them different and how to effectively manage these differences. Challenges arising from the tension between family and business pressures from governance, management and succession planning perspectives.

Prerequisite(s): third year standing, and BUSI 1005 or BUSI 1002, and one of BUSI 2101, BUSI 2121, BUSI 2702.

Lecture three hours a week.

BUSI 3629 [0.5 credit]**Corporate Governance and Strategy**

The role of governance in organizations. Mission and vision statements, values and objectives. Shaping, implementation and evaluation of corporate strategy. Management of risk and environmental analysis.

Precludes additional credit for BUSI 4609, BUSI 4709. No credit in B.Com. or B.I.B. programs.

Prerequisite(s): Enrolment in the Post-Baccalaureate Diploma in Accounting, or BUSI 1001 and BUSI 1002, or equivalents.

Lecture three hours a week.

BUSI 3700 [0.5 credit]**Cross-cultural Communication**

Principles of communication across cultural boundaries are applied to both interpersonal and commercial interactions. Critical incidents and commentary are analyzed. Students submit periodic reports, evaluated by the instructor at Carleton.

Prerequisite(s): restricted to B.I.B. students who are participating in an academic exchange.

Online course.

BUSI 3701 [0.5 credit]**Practicum in International Business I**

Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 4719 and GINS 3930.

Prerequisite(s): Third-year standing in BIB and permission of the Sprott School of Business.

Experiential Learning Activity

BUSI 3702 [0.5 credit]**Practicum in International Business II**

Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 4719 and GINS 3931.

Prerequisite(s): third-year standing in BIB and permission of the Sprott School of Business.

Experiential learning activity

BUSI 3703 [0.5 credit]**International and Comparative Management**

The management of large organizations spanning national boundaries, including domestic firms with international markets, and multinational corporations. Difficulties of maintaining communication and control in international operations in disparate cultural settings.

Prerequisite(s): second-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 3704 [0.5 credit]**The Environment of International Business**

Theories linking environmental factors and business strategy as a basis for study of some major factors and institutions shaping international business strategy. International trade patterns, regionalization, shifts in international finance, research and development and transnational data flows.

Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C or higher in each), and ECON 1001 and ECON 1002 (or ECON 1000) (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 3705 [0.5 credit]**International Buyer Behaviour**

Behaviour of end-consumers, business and government buyers, and investors in the international context. National, cross-national, and subnational segments and behaviour differences. Adaptation vs. standardisation strategies in the context of socio-psychological, legal, technological, international procurement rules, and other constraints and opportunities.

Prerequisite(s): third-year standing, BUSI 2204 or BUSI 2208, and BUSI 2702 or BUSI 3703.
Lecture three hours a week.

BUSI 3706 [0.5 credit]**International Business Negotiations**

Introduction to theory and practice of negotiation in the international business context. Analysis of techniques of conflict resolution and improving ways to reach agreements.

Prerequisite(s): second-year standing, and BUSI 2701 or BUSI 2702 (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 3800 [0.5 credit]**Business Case Analysis**

Analysis, solution and presentation of complex business issues through cases.

Includes: Experiential Learning Activity
Prerequisite(s): minimum 7.0 Major CGPA in B.Com. or B.I.B. and permission of the Sprott School of Business.
Lecture three hours and tutorial one hour a week.

BUSI 3810 [0.5 credit]**Business Development**

Business development, growth and expansion through financing activities and new customer acquisition.
Prerequisite(s): BUSI 2800 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3820 [0.5 credit]**Practicum in Business Design**

Students will apply entrepreneurial concepts and engage in designing an entrepreneurial project. Students will prepare in groups a business plan, including in-depth analysis and recommendations.

Includes: Experiential Learning Activity
Prerequisite(s): third-year standing, and BUSI 2800 with a grade of C- or higher.
Lecture three hours a week.

BUSI 3995 [0.0 credit]**Employability Passport III**

An advanced course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity
Prerequisite(s): BUSI 2995.
Participation in employability events and initiatives throughout the year.

BUSI 3996 [0.0 credit]**Employability Passport BIB III**

An advanced course in the knowledge and tools required for a career in Business.

Prerequisite(s): BUSI 2996 and BUSI 2997.

BUSI 3997 [0.0 credit]**Employability Passport BIB III**

An advanced course in the knowledge and tools required for a career in Business.

Prerequisite(s): BUSI 2996 and BUSI 2997.

BUSI 3999 [0.0 credit]**Co-operative Work Term**

This course covers the deliverables associated with the co-op work term such as the site visit, work term report submission and employer evaluation.

Includes: Experiential Learning Activity
Prerequisite(s): This course is for students on a university approved co-op work term.

BUSI 4005 [0.5 credit]**Taxation II**

An intensive review of federal income tax laws and regulations as significant elements in the planning and decision making process of taxable Canadian corporations. Emphasis on the tax planning function of corporate management and the associated accounting and reporting aspects.

Precludes additional credit for BUSI 2005.
Prerequisite(s): BUSI 3005 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4008 [0.5 credit]**Advanced Management Accounting and Control**

Builds on concepts covered in management and cost accounting courses. Integrates relevant issues from other functional areas: strategic uses of cost management, budgeting, and performance evaluation systems in managerial planning and control.

Prerequisite(s): BUSI 3008 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4104 [0.5 credit]**Strategic Human Resources Management**

Systems, strategies and practices used to effectively leverage human capital in organizations. How to think strategically about managing human assets, and what must be done to successfully implement these systems, strategies and practices.

Prerequisite(s): BUSI 3102 and BUSI 3103 (with a grade of C- or higher in each).

Lecture three hours per week.

BUSI 4105 [0.5 credit]**Managing Change**

An overview of current thinking about change management. Topics covered include understanding the forces for and barriers to change, diagnosing the environment around change and implementing change.

Prerequisite(s): third-year standing, and one of BUSI 2101, BUSI 2702, BUSI 3602, PSYC 2801 (with a grade of C- or higher in each).

Lectures three hours a week.

BUSI 4108 [0.5 credit]**Organizational Learning**

Contemporary training and development challenges facing individuals, organizations, and communities and the role of information technology in enhancing individual and collective skills development, capabilities, core competencies, intellectual capital and competitiveness.

Prerequisite(s): BUSI 3103 or BUSI 3602 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4111 [1.0 credit]**Training and Development**

Emphasizes contingency approach to training and development; relevant to organizations of all sizes and resource capacities. Effective training and development is conceptualized as a process that integrates extensive front and back-end planning, implementation, and evaluation activities.

Prerequisite(s): third-year standing, and one of BUSI 2101, BUSI 2121, BUSI 2702 (with a grade of B- or higher in each), and permission of the Sprott School of Business.

Lecture three hours and tutorial one hour per week.

BUSI 4112 [0.5 credit]**Organizational Leadership**

Critical examination of theories of leadership and trends in contemporary research; discussion of practical methods for building leadership capacity.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, and one of BUSI 2101, BUSI 2702, BUSI 3602, PSYC 2801 (with a grade of C- or higher in each).

Lecture and field work as needed.

BUSI 4117 [1.0 credit]**Creative Thinking**

Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization).

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3117B taken prior to 2020/21.

Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C- or higher in each), and permission of the Sprott School of Business. Lecture three hours a week.

BUSI 4120 [0.5 credit]**Environmental Sustainability Management**

This course involves guest lectures, class discussions and group assignments evaluating the role of business in environmental problems. The course will delve into current conundrums of the role of business models to mitigate harm and adapt to change in search for solutions to environmental issues.

Prerequisite(s): BUSI 3119 and fourth-year standing.

Restricted to BCom, BIB and students registered in any of Sprott's Minor in Business offerings.

Lecture three hours a week.

BUSI 4129 [0.5 credit]**Managing the Arts**

Challenges of managing arts organizations with emphasis on the changing environment of arts consumption and funding. Tensions arising from blending artistic and aesthetic dimensions with functional considerations when judging organizational and personal issues form a continuing theme.

Prerequisite(s): third year standing.

Also offered at the graduate level, with different requirements, as MGMT 5129, for which additional credit is precluded.

Lecture three hours a week.

BUSI 4201 [0.5 credit]**Marketing Metrics**

An overview of essential marketing metrics used for enhancing marketing decisions. The course consists of seven core modules: share metrics, margins and profits, pricing, product and portfolio management, sales force management, promotion profitability, and customer profitability.

Prerequisite(s): BUSI 1005 and BUSI 2208.

Lecture three hours a week.

BUSI 4203 [0.5 credit]**Marketing In Not-for-Profit Organizations**

Theories and practices of marketing in not-for-profit organizations including government. Similarities and differences between marketing in not-for-profit and for-profit organizations, and the key issues faced by marketers in developing marketing strategies in not-for-profit organizations.

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 4205 [0.5 credit]**International Marketing Strategy**

The marketing function in international markets from a strategic and managerial perspective. Environments of foreign markets in relation to marketing research, international branding and positioning, and product, price, distribution, and communication strategies. International expansion methods and foreign market evaluation and selection.

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4208 [0.5 credit]**Marketing Management**

In depth analysis and applications of the managerial aspects of marketing. Marketing strategy development and implementation theory and practice.

Prerequisite(s): third year standing, BUSI 2208, and one of BUSI 3205 or BUSI 3207 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 4209 [0.5 credit]**Consumer Culture Theory**

Consumer behaviour from a macro and interpretive approach, as a social and cultural phenomenon; the relationships between consumers, the marketplace and cultural meaning.

Precludes additional credit for BUSI 4206 (no longer offered).

Prerequisite(s): third year standing, and BUSI 3209 (with a grade of C or higher).

Lecture three hours a week.

BUSI 4219 [0.5 credit]**Sustainability Marketing**

An overview of the roles of marketing in a sustainable society: advancing organizations' economic success while creating positive impacts on the environment and society; promoting consumers' sustainable lifestyle; advocating institutional change to facilitate sustainable production and consumption.

Includes: Experiential Learning Activity

Prerequisite(s): 3rd year standing. Restricted to BCom, BIB and students registered in any of Sprott's Minor in Business offerings.

lecture three hours a week

BUSI 4229 [0.5 credit]**Marketing in the Arts and Culture Sectors**

Advanced study of marketing within the arts and culture sectors. Facilitates sophisticated understanding of the knowledge and skills required for marketing managers to respond to changing market environments in order to bring arts and culture offerings to their target audiences.

Prerequisite(s): third year standing, and BUSI 2204 or BUSI 2208 (with a grade of C or higher in each).

Also offered at the graduate level, with different requirements, as MKTG 5229, for which additional credit is precluded.

Lecture three hours a week.

BUSI 4301 [0.5 credit]**Artificial Intelligence and Business Decision Models**

This course lays the foundations of Artificial Intelligence (AI) for business decision models using two currently dominant frameworks: Machine Learning and Deep Learning. This course discusses how to profit from AI through business model innovation in business domains including accounting, finance, marketing and supply chain.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2300, ECON 4005.

Prerequisite(s): third-year standing, BUSI 2401, and STAT 2601 or STAT 2606.

Lecture three hours and lab one hour per week.

BUSI 4302 [0.5 credit]**Management of Quality**

Quality concepts and methods surrounding the definition, mapping, implementation, improvement of business processes in organizations and global supply chains.

Prerequisite(s): third-year standing, BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4304 [0.5 credit]**Procurement and Contracting**

Core supply chain procurement processes in the private and public sectors involved in the acquisition of goods and services, including sourcing, purchasing, contracting, supplier collaboration and relationship development and management. Emphasis on concepts, principles, practices, and techniques.

Prerequisite(s): third-year standing, and BUSI 2301 (with a C grade or higher).

Lecture three hours a week.

BUSI 4308 [0.5 credit]**Simulation Modeling and Analytics**

Concepts of computer simulation for predictive and prescriptive analytics through case studies, worked examples and hands-on projects. Emphasizes static simulations with spreadsheets, discrete-event, and agent-based simulations with specialized software. Input modeling, model design, experimental design, analysis of outputs.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3308.

Prerequisite(s): third-year standing; STAT 2601 or STAT 2606 with a grade of C- or higher.

Lecture two hours and tutorial two hours a week.

BUSI 4331 [0.5 credit]**Industry 4.0 Technologies and Applications**

This course shows how Industry 4.0 employs the IoT and AI technologies to achieve self-thinking supply chains. It demonstrates the use of Industry 4.0 in the transformation to smart industries. Lectures, demonstrations and hands-on exercises allow students to design, deploy and manage custom IoT solutions.

Precludes additional credit for BUSI 4431 (no longer offered).

Prerequisite(s): third year standing, and BUSI 2301 (with a grade of C or higher).

Lecture three hours a week and lab one hour a week.

BUSI 4400 [0.5 credit]**IS Management and Strategy**

Comprehensive treatment of current trends and management issues associated with information systems within organizations of local, national and international scope. Issues and techniques of information systems planning, administration, resource management and new technology adoption. Case studies are used.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, BUSI 1401 or BUSI 2400, and BUSI 3103 or BUSI 3602 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4404 [0.5 credit]**IT Infrastructure**

Challenges and issues managers face in assembling the infrastructure for IT service delivery. IT Service levels, data communications, networks (LAN, MAN, WAN, wireless), internetworking, SOA, web services, SaaS, server and storage virtualization, network security, business continuity and disaster recovery.

Prerequisite(s): third-year standing, and BUSI 1401 or BUSI 2400 (with a grade of C- or or higher each).

Lecture three hours a week.

BUSI 4406 [0.5 credit]**Business Analytics**

Evolution of decision support systems. Business intelligence. Data mining and warehousing. Web analytics. Mobile apps for business analytics. Strategic use of information systems for competitive advantage.

Precludes additional credit for BUSI 3406.

Prerequisite(s): third-year standing, and BUSI 1401 or BUSI 2400 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 4407 [0.5 credit]**Business Analytics Methods**

Frameworks and quantitative methods used in predictive and prescriptive business analytics for decision-making with less risk and better outcomes. Practical applications with various analytical tools across a range of industries. Data integration; model formulation, implementation, solutions, and managerial insights.

Prerequisite(s): Third-year standing, BUSI 3406 (with a grade of C or higher).

Lecture two hours and lab two hours a week.

BUSI 4408 [0.5 credit]**Social Analytics**

Covers the process, tool and techniques necessary to acquire, clean and analyze text that has been generated on social platforms. Social network analysis, sentiment analysis, topic extraction, co-occurrence analysis.

Prerequisite(s): third year standing, BUSI 1401 or BUSI 2400, and BUSI 2208, and STAT 2601 or STAT 2606. Restricted to students enrolled in B.Com, BIB, and the B.Econ Economic Data Science Concentration.

Lecture three hours a week.

BUSI 4410 [0.5 credit]**Responsible Business Analytics**

Values in Technology, Data Governance, Data Anonymization and its limits, Ethical issues in HR and Talent Analytics, Disinformation, Misinformation, and Fake News, Bias & Fairness, Privacy, consent, and surveillance, Algorithm Colonialism, Legal Frameworks, The Nerd revolution.

Prerequisite(s): Fourth-year standing, BUSI 2401, and BUSI 4601.

Lecture 3 hours a week.

BUSI 4414 [0.5 credit]**Capstone in Business Analytics**

This is a capstone course for the Business Analytics concentration. The objective of this course is to be the concentration's culminating course allowing students to undertake a major BA project, while refining their knowledge by examining a set of advanced/specialized topics.

Prerequisite(s): Fourth-year standing and BUSI 2401.

Lecture 3 hours a week.

BUSI 4500 [0.5 credit]**Advanced Corporate Finance**

An in-depth examination of some of the major theoretical issues in corporate finance. This course requires analyses and presentations of both articles from the finance literature and case studies.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year

standing, BUSI 3500, BUSI 3502, BUSI 3512 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4502 [0.5 credit]**Portfolio Management**

Analysis of investment requirements for individuals and institutional investors: liquidity, risk and return; portfolio design, construction, management and control; performance measurement; capital market theory.

Prerequisite(s): fourth-year standing,

BUSI 3500, BUSI 3502, and BUSI 3512 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher).

Lecture three hours a week.

BUSI 4503 [0.5 credit]**Applied Portfolio Management**

Participants of the Sprott Student Investment Fund will be exposed to equity research, analysis, valuation, and portfolio composition. The course allows fund members to fully understand stock selection and fund management, and expose them to the methods and techniques used by industry.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3502 and permission of the Sprott School of Business.

Workshops three hours a week.

BUSI 4504 [0.5 credit]**International Finance**

Management of corporate finance as it is affected by the requirements of international business. Issues related to international acquisitions, global investments, volatile exchange rates and hedging techniques. Role of international markets in financing corporate activity. Precludes additional credit for BUSI 3504 (no longer offered) and BUSI 3505 (no longer offered).

Prerequisite(s): BUSI 2505 with a grade of C- or higher.

Lecture three hours a week.

BUSI 4505 [0.5 credit]**Global Financial Markets and Institutions**

Comprehensive view of the world's financial markets and institutions. The primary focus will be on the purpose and practice of financial institutions, and the specifics of the financial instruments available to the firm and investor.

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4510 [0.5 credit]**Mergers and Acquisitions**

The theory and practice of mergers and acquisitions; the best ways to analyze, design and implement mergers and acquisitions transactions. A highly practical planning-based approach to managing the acquisition process will be employed.

Prerequisite(s): BUSI 3500 and BUSI 3502 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher in each).

Lecture three hours per week.

BUSI 4511 [0.5 credit]**Fixed Income Analysis**

Valuation of fixed income securities and interest rate derivatives including bonds, mortgage- and asset-based securities. Analytic tools used in bond portfolio and interest rate risk management including yield curve construction, duration and convexity, and term structure models.

Prerequisite(s): BUSI 3502 and BUSI 3512 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4515 [0.5 credit]**Micro Finance**

Theory and practice of microfinance, its achievements and current challenges; basic skills needed to manage microfinance institutions. The future of microfinance and of financing for development in general. A mix of cases and lectures will be used.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing and enrollment in the Global Financial Management and Systems concentration in the BIB, BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Also offered at the graduate level, with different requirements, as FINA 5515, for which additional credit is precluded.

Lecture three hours a week.

BUSI 4601 [0.5 credit]**Business Ethics**

Use of ethical reasoning to analyze business decisions. The ethical content of these decisions. The role of ethics in business situations. Practice in ethical reasoning. Major ethical systems.

Precludes additional credit for BUSI 4705.

Prerequisite(s): fourth-year standing B.Com. Note that B.Com. concentration in International Business students require BUSI 4705.

Lectures three hours a week.

BUSI 4607 [0.5 credit]**Management of Technology and Innovation**

Integration of technology and strategy; design of technological strategy; development of new business around new technology; and management of corporate research and development, including pre-competitive consortia.

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4608 [0.5 credit]**Canadian Business History**

The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business- government relations).

Also listed as HIST 3205.

Prerequisite(s): fourth-year standing in B.Com. or B.I.B.

Lectures three hours a week.

BUSI 4609 [0.5 credit]**Strategic Management**

Analysis and evaluation of the organization's corporate and business strategies; integration and synthesis of knowledge acquired in the program by application of acquired functional skills to strategic decision making. Precludes additional credit for BUSI 3629, BUSI 4709.

Prerequisite(s): fourth-year standing in all B.Com. and successful completion of all 2000- and 3000- level courses in the Major requirement. Note that B.Com. concentration in International Business students require BUSI 4709.

Lectures three hours a week.

BUSI 4704 [0.5 credit]**The Business Environment in Europe**

The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture.

Also listed as EURL 4704.

Precludes additional credit for EURL 4006 (no longer offered), BUSI 4604 (no longer offered).

Prerequisite(s): third-year standing.

Seminar three hours a week.

BUSI 4705 [0.5 credit]**Ethics and Cross-cultural Interaction**

Perceptions and behaviors that characterize interactions among individuals from various cultural backgrounds, with emphasis on ethical issues that may arise when business crosses cultural boundaries. Various systems, both organizational and individual, for dealing with contrasting expectations are discussed.

Precludes additional credit for BUSI 4601.

Prerequisite(s): fourth-year standing in B. Com. (International Business Concentration) or B.I.B., and BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4706 [0.5 credit]**International Human Resource Management**

Theoretical and process issues in the recruitment, selection, training, evaluation and repatriation of personnel in multi-country organizations. Issues are examined from the perspective of organizations, expatriates and local employees of multinational firms.

Prerequisite(s): third-year standing, BUSI 3102, and one of BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4707 [0.5 credit]**Regionalism and Globalization**

Trends in globalization versus supra- and sub-national regionalism. Role of international institutions (e.g. OECD, WTO). Strategy adaptation and integration within and across trade blocs (e.g. NAFTA, EU, Mercosur, ASEAN). Strategies for sub-national markets with similarities across different countries.

Prerequisite(s): third-year standing in B.Com., B.I.B., or Minor in Business, and BUSI 2701 or BUSI 2702.

Lectures three hours a week.

BUSI 4708 [0.5 credit]**International Expansion and Operations**

Internationalization process. Methods of international expansion including exporting, greenfield investment, acquisition, joint venture, and licensing. Theories of international market selection, investment location, and market service.

Prerequisite(s): fourth-year standing, and BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4709 [0.5 credit]**Strategic Management for International Business**

Development and implementation of strategies within and across international markets. Emphasis on developing strategic perspectives that incorporate the environment, the state of the industry, and the capabilities of the firm. Integrates skills, concepts and theories learned in functional areas.

Precludes additional credit for BUSI 3629, BUSI 4609.

Prerequisite(s): fourth-year standing in B.Com.

(International Business Concentration) or B.I.B., and successful completion of all 2000- and 3000-level courses in the Major requirement.

Lectures three hours a week, tutorial one hour a week.

BUSI 4710 [0.5 credit]**International New Ventures**

Challenges facing entrepreneurs in the creation and growth of competitive knowledge-based new international ventures or 'born globals'. Identification of opportunities abroad, strategies and logistics, sourcing, international deal making and business models.

Prerequisite(s): third-year standing, and BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4717 [0.5 credit]**Managing Globalization in Emerging Economies**

Critical examination of the managerial and institutional issues of globalization from the perspectives of emerging economies. Indigenous and international institutions' role in the evolution of a competitive and inclusive global economy and society. Discerning lessons of experience for newly globalizing societies.

Precludes additional credit for BUSI 4902 (no longer offered).

Prerequisite(s): fourth year standing in B.Com, BIB, or Minor in Business, ECON 1001 and ECON 1002 (or ECON 1000).

Lectures three hours a week.

BUSI 4719 [0.5 credit]**Practicum in International Business**

Students will engage in an approved international experience, abroad or within Canada (can include SSCG), that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3701, BUSI 3702.

Prerequisite(s): third-year standing in B.Com. International Business concentration and permission of the Spratt School of Business.

BUSI 4800 [0.5 credit]**Spratt Student Consulting II**

An experiential work environment in which students interact with real clients as a consultant. Various types of projects are possible depending on the company and their goals/needs. Companies may be internal (i.e. Carleton, Spratt), or external (i.e. not for profit, for profit, start-ups, entrepreneurs).

Includes: Experiential Learning Activity

Prerequisite(s): Permission of the Spratt School of Business.

Also offered at the graduate level, with different requirements, as BUSI 5997, for which additional credit is precluded.

Significant industry/project/service consultancy exposure.

BUSI 4810 [0.5 credit]**Practicum in Business Creation**

Students apply concepts and engage in groups to implement the design of an entrepreneurship project per their business plan developed in BUSI 3820. The projects provide opportunities for experiential learning.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3820.

Lectures three hours per week.

BUSI 4901 [0.5 credit]**Topics in Business I**

A selected topics course may be offered. Topics may vary. Consult the School's website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.

Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.

Lecture three hours a week.

BUSI 4902 [0.5 credit]**Topics in Business II**

A selected topics course may be offered. Topics may vary. Consult the School's website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.

Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.

Lecture three hours a week.

BUSI 4904 [1.0 credit]**Directed Studies I**

Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4905 [0.5 credit]**Directed Studies II**

Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4906 [1.0 credit]**Research Project for Business**

Provides students with opportunity to conduct research in their area of interest and present the research in an undergraduate thesis format. Conducted under the supervision of a faculty advisor from Spratt, with the specific deliverable determined by Supervisor and student, and approved by Spratt School.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4995 [0.0 credit]**Employability Passport IV**

An advanced course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3995.

Participation in employability events and initiatives throughout the year.

BUSI 4996 [0.0 credit]**Employability Passport BIB IV**

An advanced course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3700.

Participation in employability events and initiatives throughout the year.

BUSI 4997 [0.0 credit]**Employability Passport BIB IV**

An advanced course in the knowledge and tools required for a career in Business.

Prerequisite(s): BUSI 3996 and BUSI 3997.

Canadian Studies

This section presents the requirements for programs in:

- Canadian Studies B.A. Honours
- Canadian Studies B.A. Combined Honours
- Indigenous Studies B.A. Combined Honours
- Canadian Studies B.A.
- Minor in Canadian Studies
- Minor in Indigenous Studies
- Minor in Heritage and Conservation
- Minor in Québec Studies
- Mention Français: Canadian Studies Honours
- Mention Français: Canadian Studies Combined Honours
- Mention Français: Canadian Studies B.A.

Program Requirements

Canadian Studies

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.5 credits in:	1.5
CDNS 1001 [0.5]	Introduction to the Study of Canada
CDNS 1101 [0.5]	Power, Places and Stories in/of Odawang/Ottawa
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
2. 1.5 credits in:	1.5
CDNS 2000 [0.5]	Debating Canada
CDNS 2001 [0.5]	Canada and Global Issues
CDNS 2002 [0.5]	Language, Culture, and Power
3. 1.0 credit in:	1.0
CDNS 3000 [0.5]	Situating Research in Indigenous Studies and Canadian Studies
CDNS 3020 [0.5]	Practicing Research in Indigenous Studies and Canadian Studies
4. 0.5 credit in CDNS or INDG at the 2000-level	0.5
5. 1.0 credit in CDNS or INDG at the 3000-level	1.0
6. 1.0 credit in CDNS or INDG at the 4000-level	1.0
7. 3.5 credits from the list of Approved Canadian Studies or Indigenous Studies Electives below	3.5
B. Credits Not Included in the Major CGPA (10.0 credits)	
8. 6.0 credits not in CDNS or INDG	6.0

9. 1.0 credit in language instruction in any language except English offered through the University	1.0
10. 3.0 credits in free electives	3.0
Total Credits	20.0

Canadian Studies

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.5 credit in:	1.5
CDNS 1001 [0.5]	Introduction to the Study of Canada
CDNS 1101 [0.5]	Power, Places and Stories in/of Odawang/Ottawa
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
2. 1.5 credits in:	1.5
CDNS 2000 [0.5]	Debating Canada
CDNS 2001 [0.5]	Canada and Global Issues
CDNS 2002 [0.5]	Language, Culture, and Power
3. 1.0 credit in:	1.0
CDNS 3000 [0.5]	Situating Research in Indigenous Studies and Canadian Studies
CDNS 3020 [0.5]	Practicing Research in Indigenous Studies and Canadian Studies
4. 0.5 credit in CDNS or INDG at the 2000-level	0.5
5. 0.5 credit in CDNS or INDG at the 3000-level	0.5
6. 0.5 credit in CDNS or INDG at the 4000-level	0.5
7. 1.5 credits from the list of Approved Canadian Studies or Indigenous Studies Electives below	1.5
B. Additional Requirements (13.0 credits)	13.0
8. The requirements of the other discipline must be fulfilled	
9. The School requires students to complete 1.0 credit in language instruction in any language except English offered through the University	
10. Sufficient free electives to achieve a total of 20.0 credits for the program	
Total Credits	20.0

Indigenous Studies

B.A. Combined Honours (20.0 Credits)

A. Credits Included in the Indigenous Studies Major (7.0 credits)

1. 1.0 credit in:	1.0
INDG 1010 [0.5]	Introduction to Indigenous & INDG 1011 [0.5] Peoplehood Studies
	Introduction to Indigenous-Settler Encounters
INDG 1000 [1.0]	Introduction to Indigenous Studies
2. 1.5 credits in:	1.5
INDG 2011 [0.5]	Contemporary Indigenous Studies
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality
3. 1.0 credit in:	1.0
INDG 3001 [0.5]	Indigenous Governance
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy
4. 1.0 credit in:	1.0
INDG 4001 [0.5]	Indigeneity in the City
INDG 4011 [0.5]	Indigenous Representations

5. 1.5 credits from the list of Approved INDG electives	1.5
6. 1.0 credit at the 4000-level from the list of Approved INDG electives	1.0

B. Additional Requirements (13.0 credits) 13.0

7. The requirements for Combined Honours in the other discipline must be satisfied
8. Sufficient free electives to achieve a total of 20.0 credits for the program

Total Credits 20.0

Canadian Studies

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.5 credit in: 1.5

CDNS 1001 [0.5]	Introduction to the Study of Canada
CDNS 1101 [0.5]	Power, Places and Stories in/of Odawang/Ottawa
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters

2. 1.5 credits in: 1.5

CDNS 2000 [0.5]	Debating Canada
CDNS 2001 [0.5]	Canada and Global Issues
CDNS 2002 [0.5]	Language, Culture, and Power

3. 1.0 credit from CDNS or INDG 3000-level courses 1.0

4. 1.0 credit at the 3000-level, from the list of Approved Canadian Studies or Indigenous Studies Electives below 1.0

5. 2.0 credits from the list of Approved Canadian Studies or Indigenous Studies Electives below 2.0

B. Credits Not included in the Major CGPA (8.0 credits)

6. 1.0 credit in language instruction in any language except English offered through the University. 1.0

7. 5.0 credits in electives not in CDNS or INDG 5.0

8. 2.0 credits in free elective (may be CDNS or INDG) 2.0

Total Credits 15.0

Minor in Canadian Studies (4.0 credits)

The Minor in Canadian Studies is open to all undergraduate degree students not in Canadian Studies programs.

Requirements:

1. 1.0 credit from: 1.0

CDNS 1001 [0.5]	Introduction to the Study of Canada
CDNS 1101 [0.5]	Power, Places and Stories in/of Odawang/Ottawa
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters

2. 1.0 credit from: 1.0

CDNS 2000 [0.5]	Debating Canada
CDNS 2001 [0.5]	Canada and Global Issues
CDNS 2002 [0.5]	Language, Culture, and Power

3. 1.0 credit from CDNS or INDG at the 3000- or 4000-level 1.0

4. 1.0 credit from the list of approved Canadian Studies or Indigenous Studies Electives below 1.0

Total Credits 4.0

Minor in Indigenous Studies (4.0 credits)

The Minor in Indigenous Studies is open to all undergraduate degree students.

Requirements:

1. 1.0 credit in: 1.0

INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies
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INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
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2. 1.0 credit from: 1.0

INDG 2011 [0.5]	Contemporary Indigenous Studies
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INDG 2012 [0.5]	Anishinaabe Studies
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INDG 2013 [0.5]	Haudenosaunee Studies
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INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing
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INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality
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3. 1.0 credit from: 1.0

INDG 3001 [0.5]	Indigenous Governance
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INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence
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INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy
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INDG 3901 [0.5]	Selected Topics in Indigenous Studies
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INDG 4001 [0.5]	Indigeneity in the City
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INDG 4011 [0.5]	Indigenous Representations
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INDG 4015 [0.5]	Land as a Relation
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INDG 4020 [0.5]	Practicum
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INDG 4905 [0.5]	Directed Studies I
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4. 1.0 credit from the list of approved Indigenous Studies Electives 1.0

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Minor in Heritage and Conservation (4.0 credits)

The Minor in Heritage and Conservation is open to all undergraduate degree students.

Requirements

1. 2.0 credits from: 2.0

CDNS 1101 [0.5]	Power, Places and Stories in/of Odawang/Ottawa
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CDNS 2400 [0.5]	Heritage Places and Practices in Canada
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CDNS 3700 [0.5]	Constructing and Contesting Memory in Canada
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CDNS 4400 [0.5]	Space, Landscape and Identity in Canada
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CDNS 4403 [0.5]	Heritage Conservation and Sustainability in Canada
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2. 2.0 credits in Approved Heritage Conservation Electives 2.0

Total Credits 4.0

Approved Heritage Conservation Electives

African Studies

AFRI 3004 [0.5]	The African City
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AFRI 3005 [0.5]	African Migrations and Diasporas
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Architecture

ARCH 4200 [0.5]	Architectural Conservation Philosophy and Ethics
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Art History

ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries
ARTH 2610 [0.0]	Twentieth-Century Architecture
ARTH 3002 [0.5]	Canadian Architecture
ARTH 3005 [0.5]	American Architecture
ARTH 3701 [0.5]	Art and Architecture on Site
ARTH 3710 [0.5]	Architecture and Empire
ARTH 4610 [0.5]	Topics in Modern Architecture or Design
ARTH 4701 [0.5]	Art and Architecture on Site

Environmental Studies

ENST 1020 [0.5]	People, Places and Environments
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Geography

GEOG 1020 [0.5]	People, Places and Environments
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3023 [0.5]	Cities in a Global World
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place

History

HIST 3209 [0.5]	Canadian Urban History
HIST 3809 [0.5]	Historical Representations
HIST 3814 [0.5]	Crafting Digital History
HIST 4302 [1.0]	Canada: Ideas & Culture

Indigenous Studies

INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing
INDG 4001 [0.5]	Indigeneity in the City

Minor in Québec Studies (4.0 credits)

Open to all undergraduate degree students. Additional courses containing Québec content may apply to the minor if approved by the Advisor in advance.

Requirements:

1. 2.0 credits in:	2.0
CDNS 2510 [0.5]	Memory and History in Québec
CDNS 3550 [0.5]	Diversity in Québec and Francophone Canada
FREN 2203 [0.5]	Introduction aux études littéraires 2
HIST 3301 [0.5]	Québec Since 1800
2. 1.5 credits in Approved Québec Studies Electives (see below)	1.5
3. 0.5 credit at the 3000-level or above in Approved Québec Studies Electives (see below)	0.5
Total Credits	4.0

Approved Québec Studies Electives

Art History

ARTH 2002 [0.5]	Historical Art in Canada
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Canadian Studies

CDNS 2300 [0.5]	Nationalism and Multiculturalism in Canada
CDNS 4510 [0.5]	Special Topics in Québec Studies

Film Studies

FILM 3209 [0.5]	Topics in Canadian Cinema
French	
FREN 2401 [1.0]	Introduction à la linguistique française
FREN 3414 [0.5]	Sociolinguistique du français
FREN 3417 [0.5]	Le français au Canada
FREN 4213 [0.5]	Littérature québécoise et canadienne d'expression française
FREN 4300 [0.5]	Experiential learning in French and Francophone studies

History

HIST 2301 [0.5]	Canadian Political History
HIST 3206 [0.5]	Place and Politics in Canadian History
HIST 4303 [0.5]	Society and Culture in Canada
HIST 4304 [1.0]	Canada: Politics & Society

Political Science

PSCI 4005 [0.5]	Canadian Federalism
PSCI 4009 [0.5]	Quebec Politics

Mention : Français

Students who wish to qualify for the *Mention : Français* notation in Canadian Studies may do so by fulfilling the requirements listed below, in consultation with the Undergraduate Supervisor. Courses taken for the *Mention : Français* notation may be used to fulfill the Canadian Studies B.A. or the Canadian Studies B.A. Combined Honours program requirements.

Courses taught in French at the University of Ottawa or at another university and which are approved by the Undergraduate Supervisor may be used to satisfy *Mention : Français* requirements. Students who wish to enrol in University of Ottawa courses for this purpose must do so through the University of Ottawa Exchange Agreement. To enroll in courses in French at another university, a Letter of Permission is required from the Registrar's Office.

Mention Français: Canadian Studies Honours (4.0 credits)

To graduate with the notation *Mention : Français*, Honours and Combined Honours students must include the following courses in their degree program:

1. 1.0 credit in the advanced study of the French language	1.0
2. 1.0 credit in French-Canadian culture and heritage such as:	1.0
FREN 2202 [0.5]	Introduction aux études littéraires 1
& FREN 2203 [0.5]	Introduction aux études littéraires 2
FREN 2401 [1.0]	Introduction à la linguistique française

or a course in another appropriate discipline, given in French, which is approved by the Undergraduate Supervisor. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor

3. 1.0 credit on a Canadian subject at the 2000- or 3000-level, taught in French, in any appropriate discipline. For Carleton University courses that may be used to fulfill this requirement, consult the list of Approved Canadian Studies Electives (below). Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor. 1.0

4. 1.0 credit on a Canadian subject at the 4000-level, taught in French, including either: 1.0

CDNS 4903 [0.5] Études dirigées I
or CDNS 4904 [0] Études dirigées II

or a directed studies, tutorial, research paper, or course in any appropriate discipline.

Total Credits 4.0

Notes:

- All written work must be submitted in French. Note that directed studies, tutorials, and research papers are weighted differently in various departments. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

Mention Français: Canadian Studies Combined Honours (4.0 credits)

To graduate with the notation *Mention : Français*, Combined Honours students must include the following courses in their degree program:

1. 1.0 credit in the advanced study of the French language 1.0

2. 1.0 credit in French-Canadian culture and heritage such as: 1.0

FREN 2202 [0.5] Introduction aux études littéraires 1 & FREN 2203 [0.5] Introduction aux études littéraires 2

FREN 2401 [1.0] Introduction à la linguistique française

or a course in another appropriate discipline, given in French, which is approved by the Undergraduate Supervisor. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor

3. 1.0 credit on a Canadian subject at the 2000- or 3000-level, taught in French, in any appropriate discipline. For Carleton University courses that may be used to fulfill this requirement, consult the list of Approved Canadian Studies Electives (below). Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor. 1.0

4. 1.0 credit on a Canadian subject at the 4000-level, taught in French, including either: 1.0

CDNS 4903 [0.5] Études dirigées I
or CDNS 4904 [0] Études dirigées II

or a directed studies, tutorial, research paper, or course in any appropriate discipline.

Total Credits 4.0

Notes:

- All written work must be submitted in French. Note that directed studies, tutorials, and research papers are weighted differently in various departments. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor.

2. Combined Honours program students must meet *Mention : Français* requirements of both disciplines.

Mention Français: Canadian Studies B.A. (3.0 credits)

To graduate with the notation *Mention : Français*, B.A. students must include the following courses in their degree program:

1. 1.0 credit in the advanced study of the French language 1.0

2. 1.0 credit in French-Canadian culture and heritage such as: 1.0

FREN 2202 [0.5] Introduction aux études littéraires 1 & FREN 2203 [0.5] Introduction aux études littéraires 2

FREN 2401 [1.0] Introduction à la linguistique française

or a course in another appropriate discipline, given in French, which is approved by the Undergraduate Supervisor. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor

3. 1.0 credit on a Canadian subject at the 2000- or 3000-level, taught in French, in any appropriate discipline. For Carleton University courses that may be used to fulfill this requirement, consult the list below of Approved Canadian Studies Electives. Courses from the University of Ottawa or another university must be approved by the Undergraduate Supervisor. 1.0

Total Credits 3.0

Approved Canadian Studies Electives

The following courses are deemed by the School of Indigenous and Canadian Studies to have significant Canadian content and can be included where appropriate as part of a Canadian Studies degree. Access to these courses is not guaranteed and may depend on space availability and the satisfaction of other requirements such as course prerequisites.

Carleton courses not on this list may be applied as approved Canadian Studies electives, but they must be approved by the Undergraduate Supervisor. Students taking courses at the University of Ottawa should consult with the Undergraduate Supervisor to gain approval for substituting them as approved Canadian Studies electives.

Anthropology

ANTH 2020 [0.5] Race and Ethnicity

ANTH 2180 [0.5] Foundations in Community Engagement

ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research

ANTH 2680 [0.5] Anthropology of "Mainstream" North America

ANTH 3010 [0.5] Language, Culture, and Globalization

ANTH 3020 [0.5] Studies in Race and Ethnicity

ANTH 3045 [0.5] Children and Childhood in a Globalized World

ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples

ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples	ECON 3607 [0.5]	Monetary and Financial Institutions
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	ECON 3801 [0.5]	Regional Economics
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship	ECON 3820 [0.5]	Topics in Canadian Economic Policy
Architecture		ECON 3850 [0.5]	Economics of Information and the Media
ARCH 4002 [0.5]	Canadian Architecture	ECON 4309 [0.5]	Applied Industrial Economics
Art History		ECON 4403 [0.5]	Public Economics: Expenditures
ARTH 2002 [0.5]	Historical Art in Canada	ECON 4404 [0.5]	Public Economics: Taxation
ARTH 2003 [0.5]	Canadian Twentieth-Century and Contemporary Art	ECON 4460 [0.5]	Health Economics
ARTH 2005 [0.5]	Arts of the First Peoples: The Woodlands, the Plains and the Subarctic	English	
ARTH 2006 [0.5]	Arts of the First Peoples: The Southwest, the West Coast and the Arctic	ENGL 2802 [1.0]	Indigenous and Canadian Literatures
ARTH 2008 [0.5]	Inuit Art	ENGL 2956 [0.5]	Literatures of the Americas I
ARTH 3000 [0.5]	Themes in Canadian Art	ENGL 2957 [0.5]	Literatures of the Americas II
ARTH 3002 [0.5]	Canadian Architecture	ENGL 3801 [0.5]	Canadian Poetry
ARTH 3701 [0.5]	Art and Architecture on Site	ENGL 3803 [0.5]	Canadian Fiction
ARTH 4000 [0.5]	Topics in Art in Canada	ENGL 3940 [0.5]	Studies in Diaspora Lit.
ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art	ENGL 3960 [0.5]	Studies in Indigenous Literature
Canadian Studies		ENGL 4802 [0.5]	Race, Ethnicity and Canadian Lit.
CDNS 4800 [1.0]	Internship Practicum	ENGL 4806 [0.5]	Studies in Canadian Literature I
CDNS 4801 [0.5]	Internship/Practicum	ENGL 4807 [0.5]	Studies in Canadian Literature II
CDNS 4802 [0.5]	Internship/Practicum	ENGL 4960 [0.5]	Indigenous Literatures I
CDNS 4901 [0.5]	Selected Topics in Canadian Studies	ENGL 4961 [0.5]	Indigenous Literatures II
CDNS 4902 [0.5]	Selected Topics in Canadian Studies	Environmental Studies	
CDNS 4903 [0.5]	Études dirigées I	ENST 2000 [0.5]	Environmental Justice (Environmental Studies)
CDNS 4904 [0.5]	Études dirigées II	Film Studies	
CDNS 4905 [0.5]	Directed Studies I	FILM 2206 [0.5]	Canadian Cinema
CDNS 4906 [0.5]	Directed Studies II	FILM 3209 [0.5]	Topics in Canadian Cinema
CDNS 4907 [1.0]	Directed Studies III	First Year Seminar	
Students may use CDNS courses as approved Canadian Studies electives, provided they have met their core program requirements.		FYSM 1401 [1.0]	Multiculturalism in Canada
Communication & Media Studies		FYSM 1406 [1.0]	How Ottawa Works: Exploring National Institutions
COMS 1001 [0.5]	Foundations in Communication and Media Studies	FYSM 1409 [1.0]	Controversies and Social Change in Canada Today
COMS 1002 [0.5]	Current Issues in Communication and Media	FYSM 1410 [1.0]	Canadian Popular Culture
COMS 2600 [0.5]	Communication and Culture	French	
COMS 3400 [0.5]	Ethical Controversies in Media and Communication	FREN 2203 [0.5]	Introduction aux études littéraires 2
COMS 3401 [0.5]	Communications Regulation in Canada	FREN 2401 [1.0]	Introduction à la linguistique française
COMS 3411 [0.5]	Media and Social Activism	FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950
Economics		FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature
ECON 3201 [0.5]	Economic Thought and Policy in Canada	FREN 3417 [0.5]	Le français au Canada
ECON 3220 [0.5]	Canadian Economic History	FREN 3900 [0.5]	Apprentissage et enseignement du français langue seconde
ECON 3300 [0.5]	Public Policy Toward Business	FREN 4213 [0.5]	Littérature québécoise et canadienne d'expression française
ECON 3365 [0.5]	Introduction to Industrial Relations	FREN 4300 [0.5]	Experiential learning in French and Francophone studies
ECON 3420 [0.5]	Economic Theories of Federalism	Geography	
ECON 3450 [0.5]	Political Economy in the Modern State	ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions
		GEOG 2020 [0.5]	Ecosystems of Canada
		GEOG 2500 [0.5]	Climate Change: Social Science Perspectives

GEOG 3026 [0.5]	Topics in the Geography of Canada
GEOG 3501 [0.5]	Geographies of the Canadian North
History	
HIST 1301 [0.5]	Conflict and Change in Early Canadian History
HIST 1302 [0.5]	Rethinking Modern Canadian History
HIST 2301 [0.5]	Canadian Political History
HIST 2304 [1.0]	Social and Cultural History of Canada
HIST 2311 [0.5]	Environmental History of Canada
HIST 3205 [0.5]	Canadian Business History
HIST 3206 [0.5]	Place and Politics in Canadian History
HIST 3209 [0.5]	Canadian Urban History
HIST 3220 [0.5]	Canadian Economic History
HIST 3301 [0.5]	Québec Since 1800
HIST 3304 [0.5]	Canada-United States Relations
HIST 3306 [0.5]	Canada's International Policies
HIST 3500 [0.5]	Migration and Diaspora in Canada
HIST 3505 [0.5]	Women in Canada
HIST 3507 [0.5]	An Immigrant's Guide to Canada
HIST 3510 [0.5]	Indigenous Peoples of Canada
HIST 3511 [0.5]	Themes in Indigenous History
HIST 3903 [0.5]	Topics in Canadian History
HIST 4302 [1.0]	Canada: Ideas & Culture
HIST 4303 [0.5]	Society and Culture in Canada
HIST 4304 [1.0]	Canada: Politics & Society
HIST 4305 [0.5]	Political History in Canada
Human Rights	
HUMR 2401 [0.5]	Political Repression
HUMR 3302 [0.5]	Culture, Religion, and Women's Human Rights
HUMR 4404 [0.5]	Rights of Refugees and Displaced Persons
Indigenous Studies	
Students may use INDG courses as approved Canadian Studies electives, provided they have met their core program requirements.	
Journalism	
JOUR 2501 [0.5]	Media Law
Law	
LAWS 1001 [0.5]	Introduction to Legal Studies 1
LAWS 2301 [0.5]	Criminal Justice System
LAWS 2302 [0.5]	Criminal Law
LAWS 2501 [0.5]	Law, State and Constitution
LAWS 2502 [0.5]	Law, State and Citizen
LAWS 3001 [0.5]	Women and the Legal Process
LAWS 3209 [0.5]	Canadian Correctional Policies in Historical Perspective
LAWS 3305 [0.5]	Crime and State in History
LAWS 3306 [0.5]	Crime, Law, Process and Politics
LAWS 3307 [0.5]	Youth and Criminal Law
LAWS 3500 [0.5]	Constitutional Law
LAWS 3501 [0.5]	Law in the Information Society
LAWS 3502 [0.5]	Regulating Freedom of Expression in Canada
LAWS 3503 [0.5]	Equality and Discrimination

LAWS 3504 [0.5]	Law and Aboriginal Peoples
LAWS 3506 [0.5]	Administrative Law
LAWS 3509 [0.5]	The Charter of Rights Topics
LAWS 3804 [0.5]	Law of the Family
Music	
MUSI 3103 [0.5]	Music in Canada
MUSI 3104 [0.5]	Popular Musics of Canada
MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada
MUSI 4104 [0.5]	First Peoples Music in Canada
Political Science	
PSCI 1100 [0.5]	Democracy in Theory and Practice
PSCI 1501 [0.5]	Politics of Migration
PSCI 2002 [0.5]	Canadian Politics and Civil Society
PSCI 2003 [0.5]	Canadian Political Institutions
PSCI 3000 [0.5]	Canadian Provincial Politics
PSCI 3004 [0.5]	Political Parties and Elections in Canada
PSCI 3005 [0.5]	Ontario Government and Politics
PSCI 3006 [0.5]	Social Power in Canadian Politics
PSCI 3007 [0.5]	Constitutional Politics in Canada
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3303 [0.5]	Feminist Political Theory
PSCI 3401 [0.5]	Canadian Public Administration
PSCI 3402 [0.5]	Canadian Public Policy
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 3608 [0.5]	Migration Governance
PSCI 4003 [0.5]	Politics and the Media
PSCI 4005 [0.5]	Canadian Federalism
PSCI 4006 [0.5]	Legislatures and Representation in Canada
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State
PSCI 4009 [0.5]	Quebec Politics
PSCI 4010 [0.5]	Executive Power in Canadian Politics
PSCI 4107 [0.5]	Political Participation in Canada
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms
PSCI 4204 [0.5]	Elections
PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4209 [0.5]	Westminster Democracies: Parliaments, Parties and Elections
PSCI 4403 [0.5]	Reproductive Rights Policy in North America
PSCI 4407 [0.5]	Public Policy: Content and Creation
PSCI 4607 [0.5]	Politics of North America
Religion	
RELI 2712 [0.5]	Religious Diversity of Canada
RELI 2720 [0.5]	Indigenous Religions of Canada
Sexuality Studies	
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
SXST 3104 [0.5]	Transnational Sexualities

Social Work

SOWK 1001 [0.5]	Introduction to Social Welfare
SOWK 1002 [0.5]	Introduction to Social Work
SOWK 2100 [0.5]	The Political Economy of the Social Welfare State
SOWK 2300 [0.5]	Drugs in Society: Theory, Policy , Practice
SOWK 3100 [0.5]	Social Policy and Administration
SOWK 3804 [0.5]	Law of the Family
SOWK 4102 [0.5]	Indigenous Peoples and Social Policy
SOWK 4103 [0.5]	Practice and Policy in Immigration

Sociology

SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 2045 [0.5]	Gender and Society
SOCI 2170 [0.5]	Foundations in Social Justice
SOCI 2180 [0.5]	Foundations in Community Engagement
SOCI 3019 [0.5]	Sociology of International Migration
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3040 [0.5]	Studies in the Sociology of Gender
SOCI 3045 [0.5]	Children and Childhood in a Globalized World
SOCI 3420 [0.5]	Studies in Gender and Criminal Justice
SOCI 4750 [0.5]	Advanced Studies in Globalization and Citizenship

Indigenous Studies Electives

The following courses are deemed by the School of Indigenous and Canadian Studies to have significant Indigenous content, and can be included where appropriate as part of an Indigenous Studies program. Carleton courses not on this list may be applied as approved Indigenous Studies electives, but they must be approved by the Indigenous Studies Undergraduate Supervisor. Students taking courses at the University of Ottawa should consult with the Indigenous Studies Undergraduate Supervisor to gain approval for substituting them as approved Indigenous Studies electives.

African Studies

AFRI 1001 [0.5]	Introduction to African Studies I
AFRI 1002 [0.5]	Introduction to African Studies II
AFRI 3001 [0.5]	Globalization and Popular Culture in Africa
AFRI 3100 [0.5]	African Studies Abroad: Selected Topics
AFRI 4000 [0.5]	Advanced Topics in African Studies
AFRI 4050 [0.5]	Selected Topics in African Studies

Anthropology

ANTH 2610 [0.5]	Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa
ANTH 2630 [0.5]	Studies in Asian Societies: Current Issues in Anthropological Research
ANTH 2640 [0.5]	Andean Ethnography
ANTH 2650 [0.5]	Ethnography of Mesoamerica

ANTH 2660 [0.5]	Ethnography of North Africa
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 3570 [0.5]	Studies in Art, Culture and Society
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
ANTH 4730 [0.5]	Colonialism and Post-Colonialism

Art History

ARTH 2005 [0.5]	Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
ARTH 2006 [0.5]	Arts of the First Peoples: The Southwest, the West Coast and the Arctic
ARTH 2008 [0.5]	Inuit Art
ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art

Canadian Studies

CDNS 4800 [1.0]	Internship Practicum
CDNS 4801 [0.5]	Internship/Practicum
CDNS 4802 [0.5]	Internship/Practicum
CDNS 4901 [0.5]	Selected Topics in Canadian Studies
CDNS 4902 [0.5]	Selected Topics in Canadian Studies
CDNS 4903 [0.5]	Études dirigées I
CDNS 4904 [0.5]	Études dirigées II
CDNS 4905 [0.5]	Directed Studies I
CDNS 4906 [0.5]	Directed Studies II
CDNS 4907 [1.0]	Directed Studies III (Provided they have Indigenous content)

Child Studies

CHST 3002 [0.5]	Special Topics in Child Studies
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English

ENGL 2709 [0.5]	Indigenous Drama
ENGL 2926 [0.5]	African Literatures I
ENGL 2927 [0.5]	African Literatures II
ENGL 2936 [0.5]	South Asian Literatures I
ENGL 2937 [0.5]	South Asian Literatures II
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
ENGL 3960 [0.5]	Studies in Indigenous Literature
ENGL 3965 [0.5]	Intro to Postcolonial Theory
ENGL 3972 [0.5]	Studies in Postcolonial Literature
ENGL 4960 [0.5]	Indigenous Literatures I
ENGL 4961 [0.5]	Indigenous Literatures II
ENGL 4975 [0.5]	Issues in Postcolonial Theory
ENGL 4976 [0.5]	Issues in Postcolonial Literature

First Year Seminar

FYSM 1900 [1.0]	Selected Topics In the Study of Academic Discourses (specifically the section on Aboriginal Topics)
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Geography

GEOG 3209 [0.5]	Sustainability and Environment in the South
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GEOG 3501 [0.5]	Geographies of the Canadian North
History	
HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2311 [0.5]	Environmental History of Canada
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
HIST 2707 [0.5]	Modern Africa
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 3505 [0.5]	Women in Canada
HIST 3510 [0.5]	Indigenous Peoples of Canada
HIST 3511 [0.5]	Themes in Indigenous History
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3712 [0.5]	Mexico: Aztecs to Narcos
HIST 3713 [0.5]	Gender and Sexuality in Latin America
HIST 3715 [0.5]	Themes in South Asian History
HIST 3717 [0.5]	Gender and Sexuality in Africa
Human Rights	
HUMR 3503 [0.5]	Global Environmental Justice
HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
Latin and Caribbean Studies	
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies
Law	
LAWS 2201 [0.5]	Persons and Property
LAWS 2202 [0.5]	Obligations
LAWS 2501 [0.5]	Law, State and Constitution
LAWS 2502 [0.5]	Law, State and Citizen
LAWS 3504 [0.5]	Law and Aboriginal Peoples
LAWS 4504 [0.5]	Indigenous Criminal Justice
Linguistics and Language Studies	
LANG 1010 [0.5]	Introduction to a Language I
LANG 1020 [0.5]	Introduction to a Language II (When the language offered is an Indigenous language of Canada)
Music	
MUSI 3106 [0.5]	Popular Musics of the World
MUSI 4104 [0.5]	First Peoples Music in Canada
MUSI 4105 [0.5]	Study of Musics in Africa
Political Science	
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3105 [0.5]	Imperialism
PSCI 3203 [0.5]	Government and Politics in the Middle East
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms
PSCI 4203 [0.5]	Southern Africa After Apartheid

PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
Religion	
RELI 2720 [0.5]	Indigenous Religions of Canada
RELI 2800 [0.5]	Indigenous Traditions
Sexuality Studies	
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
SXST 3104 [0.5]	Transnational Sexualities
Social Work	
SOWK 4102 [0.5]	Indigenous Peoples and Social Policy
Women's and Gender Studies	
WGST 2800 [0.5]	Intersectional Identities
WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3807 [0.5]	Gendered Violence

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EARR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Canadian Studies (CDNS) Courses

CDNS 1001 [0.5 credit]

Introduction to the Study of Canada

Introduction to interdisciplinary Canadian Studies. Topics may include: Canadian, Québécois and Indigenous lenses; colonialism, migration, settlement; gender, racialization and sexuality; social movements; place, space, and nation; and political economy and culture. May include field trips.

Precludes additional credit for CDNS 1000 (no longer offered).

Lectures/groups three hours a week.

CDNS 1101 [0.5 credit]

Power, Places and Stories in/of Odawang/Ottawa

Exploration of Odawang/Ottawa as a settler-colonial border city built on unceded Algonquin territory and tensions between the national, global and local in Odawang/Ottawa. May include field trips.

Lecture/groups three hours a week.

CDNS 2000 [0.5 credit]

Debating Canada

Exploration of debates about Canada. Topics may include: Indigenous dispossession, genocide, capitalism, resource extraction; racism; patriarchal oppression; inequality; multiculturalism; and the politics of location, language and memory.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2001 [0.5 credit]

Canada and Global Issues

Examination of the role of the Canadian state and other actors in addressing global issues. Topics may include: human rights; refugees and migrant workers; peacekeeping; climate change; humanitarian assistance; Indigenous rights; and global health.

Precludes additional credit for CDNS 1102 (no longer offered).

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2002 [0.5 credit]

Language, Culture, and Power

Study of the relationship between language and power, politics, identity and culture in Canada. Consideration is given to: language policies; non-official and official language minorities; and factors of region, class and social mobility.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2210 [0.5 credit]

Introduction to the Study of Culture in Canada

Examination of key cultural myths, diverse genres, spaces, institutions, practices and critical approaches in Canada.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2300 [0.5 credit]

Nationalism and Multiculturalism in Canada

Examination of nationalism, colonialism, racialization, ethnicity, multiculturalism and questions of belonging, citizenship and inequality in contemporary and historical Canada.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2301 [0.5 credit]

Immigrants, Migrants and Diasporas

Study of historical and contemporary Canadian immigration and emigration issues. Topics may include:

dynamics of diasporic communities in Canada and Québec; Canadians abroad; and issues of citizenship and belonging.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2302 [0.5 credit]

Land, Water, Capitalism

Examination of politics and economics of land, water, and power. Topics may include: the study of labour, migrant workers, capitalist extraction; environmental racism and health; and Indigenous dispossession and resistance.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2400 [0.5 credit]

Heritage Places and Practices in Canada

An examination of heritage as the built environment, cultural landscapes, and intangible heritage. Topics may include: decolonizing memory, identity and place; heritage histories, policies, values and stakeholders; emerging issues such as climate change, mass tourism and urban development.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2510 [0.5 credit]

Memory & History in QC

Pivotal moments, important debates and crises, cultural institutions and practices, the politics of history and memory, and contemporary issues in Québec.

Precludes additional credit for CDNS 2511, FINS 2510 (no longer offered), FINS 2511 (no longer offered).

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours per week.

CDNS 3000 [0.5 credit]**Situating Research in Indigenous Studies and Canadian Studies**

An examination of the underlying research design and methods of selected works for Indigenous Studies and for Canadian Studies in order to reflect on the political, ethical and intellectual consequences, possibilities and limitations of a variety of disciplinary and interdisciplinary research practices.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3020 [0.5 credit]**Practicing Research in Indigenous Studies and Canadian Studies**

Experiential engagement with disciplinary, interdisciplinary and creative research theory and practice. Approaches may include: mixed methods; autoethnography; research-creation; collaboration; and community-based research.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3400 [0.5 credit]**Feminist and Queer Canadas**

An examination of the dynamics of feminist and queer social movements and activism. Topics may include: challenges to the regulation of bodies and sexualities; the normalization of patriarchal violence and inequality; access and recognition; and intersectionality.

Precludes additional credit for WGST 3400 (no longer offered).

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3550 [0.5 credit]**Diversity in Québec and Francophone Canada**

The study of the historical, cultural, social, and political diversity of French-speaking Canada. Topics may include: Francophone diasporic communities; multiculturalism, interculturalism; (settler) colonialism; and the politics of culture and language.

Precludes additional credit for CDNS 2500, FINS 3550 (no longer offered).

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3560 [0.5 credit]**Black Studies in Canada**

Theories and methods of Black Studies in Canada.

Topics may include: the examination of regional, national, transnational histories; structures of anti-Blackness; racial capitalism; and identities, experiences and cultures of Black Canada.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3570 [0.5 credit]**Racialization and Resistance**

Deconstructing the category of 'race' and understanding the experiences and impacts of racialization and systemic racism in Canada and Québec. Topics may include: inequality, exploitation, poverty, profiling, incarceration; cultures of resistance; decolonizing anti-racist movements; and anti-racism as critique and affirmation.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3620 [0.5 credit]**Canada-US Relations**

An examination the Canada-US relationship, including contemporary policy issues that define that relationship.

Topics covered may include: the economy; culture; defence; foreign policy; diplomacy; transnational struggles; and borderlands and the context of Turtle Island.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3700 [0.5 credit]**Constructing and Contesting Memory in Canada**

An exploration of conflicts about memory and commemoration in Canada, including: monuments and heritage sites; cultural heritage and artistic expressions; the media; education; language and cultural revitalization; and the politics of memory and forgetting.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 3901 [0.5 credit]**Selected Topics in Canadian Studies**

Study of a specific topic or area related to Canadian Studies. Topics vary from year to year.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4011 [0.5 credit]**Activism in Odawang/Ottawa**

Examination of struggles and activism in and about Ottawa/Odawang.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4012 [0.5 credit]**Settler Colonialism on Turtle Island**

Exploration of the theories, practices, and history of settler colonialism on Turtle Island. Topics may include: racialization; settlement and migration; white supremacy; heteropatriarchy; land and Indigenous relations; and contemporary struggles and decolonization.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4020 [0.5 credit]**Injury, Memory, and Redress in Canada**

Examination of the politics of redress and (re)conciliation in Canada. Topics include the ways in which historic wrongs, trauma and injury are (re)imagined and memorialized.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4400 [0.5 credit]**Space, Landscape and Identity in Canada**

Explorations of cultural landscapes and competing constructions of space. Topics may include: settler-colonial space-making; whiteness and space; diasporic space; geographies of gender and sexuality; and different understandings of nature/culture.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4403 [0.5 credit]**Heritage Conservation and Sustainability in Canada**

Theory, principles, practices and policy of heritage conservation in Canada and globally. Focus on heritage conservation and its connections with environmental, social, and economic sustainability.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Also offered at the graduate level, with different requirements, as CDNS 5403, for which additional credit is precluded.

Seminar three hours a week.

CDNS 4500 [0.5 credit]**Global Canada**

Examining Canada's place and activities on the global stage. Topics may include: Canadian multinationals; Canadian foreign policy, cultural diplomacy, and corporate globalization; advocacy for Indigenous, environmental, women's, refugees' and children's rights; racial capitalism and im/migration; security; and resistances to the global. Precludes additional credit for CDNS 3301 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4510 [0.5 credit]**Special Topics in Québec Studies**

Examination of a specific topic or area related to the study of Québec. Topics vary from year to year.

Precludes additional credit for CDNS 3510 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4800 [1.0 credit]**Internship Practicum**

Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.

Includes: Experiential Learning Activity

Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.

Prerequisite(s): permission of the School and fourth-year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4801 [0.5 credit]**Internship/Practicum**

Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.

Includes: Experiential Learning Activity

Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.

Prerequisite(s): permission of the School and fourth-year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4802 [0.5 credit]**Internship/Practicum**

Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.

Includes: Experiential Learning Activity

Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.

Prerequisite(s): permission of the School and fourth year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4901 [0.5 credit]**Selected Topics in Canadian Studies**

Study of a specific topic or area related to Canadian Studies. Topics vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4902 [0.5 credit]**Selected Topics in Canadian Studies**

Study of a specific topic or area related to Canadian Studies. Topics vary from year to year.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4903 [0.5 credit]**Études dirigées I**

Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4904 [0.5 credit]**Études dirigées II**

Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4905 [0.5 credit]**Directed Studies I**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4906 [0.5 credit]**Directed Studies II**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4907 [1.0 credit]**Directed Studies III**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Indigenous Studies (INDG) Courses**INDG 1000 [1.0 credit]****Introduction to Indigenous Studies**

Survey of historical and contemporary issues relating to Indigenous peoples in Canada. Cultural traditions and the social interactions between Indigenous and non-Indigenous societies are approached from an interdisciplinary perspective.

Precludes additional credit for INDG 1010 and INDG 1011. Online only.

INDG 1010 [0.5 credit]**Introduction to Indigenous Peoplehood Studies**

This course begins by looking at Creation Stories of different Indigenous peoples and builds to discuss Indigenous worldviews, ways of living, ecological relationships, inter-Indigenous relations and diplomacy among Indigenous peoples. Course materials are rooted in self-situated and collective understandings of Indigenous peoples.

Precludes additional credit for INDG 1000.

Lecture/groups, three hours a week.

INDG 1011 [0.5 credit]**Introduction to Indigenous-Settler Encounters**

An interdisciplinary examination of the history of relations between different Indigenous peoples and settler populations from first meetings to the mid-20th century.

Topics vary by year, but may include diplomatic relations, trade, spirituality and religion, military alliances, policy, education.

Precludes additional credit for INDG 1000.

Lecture/groups, three hours a week.

INDG 2011 [0.5 credit]**Contemporary Indigenous Studies**

Indigenous and non-Indigenous perspectives on issues since the 1960s. Topics include: contemporary explorations of treaty relationship and governance, cultural appropriation, identity politics, urban Aboriginality and contemporary social and cultural issues.

Precludes additional credit for CDNS 2100 and CDNS 2011.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

INDG 2012 [0.5 credit]**Anishinaabe Studies**

In-depth look at the Anishinaabe peoples. Topics may include: Anishinaabe creation stories, migration, the clan system, worldviews; oral, written, and recorded history; treaties, contemporary events, ecological knowing, cultural production, relations with settler-colonies and other nations, self-governance, diplomatic relations.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups three hours a week.

INDG 2013 [0.5 credit]**Haudenosaunee Studies**

Focuses on the Haudenosaunee from the founding of the Confederacy to present. Discussion of the culture, language, and structure of Haudenosaunee society, the Kaienerekowa (Great Law of Peace) and the Code of Handsome Lake, symbolism, and contemporary issues, including the impact of Euro-Canadian government policies.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2015 [0.5 credit]**Indigenous Ecological Ways of Knowing**

Indigenous peoples' relationships with the non-human world in both historical and contemporary contexts. Topics may include: the origins of Indigenous ecological ways of knowing, Indigenous languages, collective stewardship, water, land, and challenges to maintaining traditional knowledge.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2020 [0.5 credit]**Decolonizing Gender, Sex, and Sexuality**

Effects of colonization in unbalancing Indigenous peoples' lives through the imposition of constructions of gender, sex, and sexuality, and the ways that Indigenous peoples are working to restore balance to their families and communities. Topics vary by year.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2709 [0.5 credit]**Indigenous Drama**

A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors and other practitioners.

Also listed as ENGL 2709.

Prerequisite(s): second-year standing or permission of the School.

Lecture three hours per week

INDG 3001 [0.5 credit]**Indigenous Governance**

An examination and discussion of different Indigenous forms of governance. Topics will vary by year and may include: Indigenous ways of knowing and forms of governance, community leadership, diplomatic relations, and struggles for self-determination.

Precludes additional credit for INDG 3000 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3011 [0.5 credit]**Indigenous Rights, Resistance, and Resurgence**

Indigenous approaches to restoring balance within their nations. Topics include: direct action; political organizing; land claims; rights, courts, and legal action; everyday acts of resistance and resurgence such as petitioning, social media, arts-based movements, and community initiatives.

Includes: Experiential Learning Activity

Precludes additional credit for INDG 3010 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3015 [0.5 credit]**Indigenous Ecological Ways of Knowing and the Academy**

The relationship between Indigenous traditional ecological knowledges and the academy. Topics include: linguistic barriers, tensions in diffuse ways of knowing, research ethics with respect to Indigenous traditional knowledge, and working with knowledge holders.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3901 [0.5 credit]**Selected Topics in Indigenous Studies**

Topics vary from year to year.

Prerequisite(s): third- or fourth-year standing, or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4001 [0.5 credit]**Indigeneity in the City**

This course begins with an examination of the relationship between Indigenous peoples and the construction of cities and urban space. Culminates in the undertaking of research projects that directly link students to the urban Indigenous community in Ottawa.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4011 [0.5 credit]**Indigenous Representations**

Through an examination of instances of Indigenous misrepresentation, students will explore how Indigenous peoples have used cultural production in various forms (such as literature, film, television, visual arts, music, performance) to put forth their own visions of their peoples, worldviews, and lives.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

INDG 4015 [0.5 credit]**Land as a Relation**

This is an intensive 14-day field course that brings students together with knowledge holders on the land. The connections between Indigenous ways of knowing, the land, Indigenous languages, and the land's non-human inhabitants, will be explored. Locations and course fee varies by year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Fourteen-day field course.

INDG 4020 [0.5 credit]

Practicum

Students will learn to apply their knowledge of topics in Indigenous Studies with a local organization whose mandate involves working with and/or for Indigenous peoples. To be arranged in consultation with the Program Coordinator.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

INDG 4901 [0.5 credit]

Selected Topics in Indigenous Studies

Topics vary from year to year.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4905 [0.5 credit]

Directed Studies I

An optional course normally restricted to fourth-year Honours students in Canadian Studies or Indigenous Studies and to Qualifying-year Graduate students.

Includes supervised reading and written work in an Indigenous Studies area.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Certificate in Nunavut Public Service Studies (C.N.P.S.S.)

This section presents the requirements for programs in:

- Certificate in Nunavut Public Service Studies
C.N.P.S.S.

Program Requirements

Certificate in Nunavut Public Service Studies C.N.P.S.S. (5.0 credits)

Requirements:

1. 1.0 credit in:		1.0
PADM 1501 [0.5]	Public Administration in Nunavut	
PADM 1502 [0.5]	Management of Federal-Territorial Relations	
2. 1.0 credit in:		1.0
ENGL 1002 [0.5]	Writing and Language I	
ENGL 1003 [0.5]	Writing and Language II	
3. 1.0 credit in:		1.0
BUSI 1001 [0.5]	Principles of Financial Accounting	
BUSI 2101 [0.5]	Organizational Behaviour	
4. 1.0 credit in:		1.0
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
5. 0.5 credit in:		0.5
HIST 1010 [0.5]	History of Northern Canada	
6. 0.5 credit in:		0.5
PSCI 1100 [0.5]	Democracy in Theory and Practice	
Total Credits		5.0

Regulations

See the Academic Regulations of the University section of this Calendar.

This Certificate program is designed primarily for prospective or practicing public employees in Nunavut who seek special training in public service subjects at the undergraduate level.

Courses taken for the Certificate may be credited towards a Bachelor of Arts degree. A transfer student from the Certificate program into the Bachelor of Arts program normally will be required to take at least 10.0 further credits. At least 5.0 of the credits required for the degree must be completed after awarding of the Certificate.

Academic Standing

A candidate for the Certificate must obtain a grade of C or higher in at least half of the credits taken at Carleton University for the Certificate.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Certificate

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) with a grade of 60 percent or higher. For applicants whose first language is not English, the requirement of 4U English can also be met under the conditions outlined in the section "English Language Requirements" in the Admissions Requirements and Procedures section of this Calendar. Special consideration will be extended to other applicants under Mature Applicant regulations (see Mature and Special Admissions, in the Admissions Regulations and Procedures section of this Calendar).

Candidates may be admitted with advanced standing, but must take at least 3.0 credits for the Certificate from Carleton University.

Certificate in Science and Policy

This section presents the requirements for programs in:

- Certificate in Science and Policy

Certificate in Science and Policy (5.0 credits)

May be taken following successful completion of a college diploma (or equivalent) or a university degree in any discipline with a minimum average grade of B. Can also be completed concurrently with any undergraduate degree after completing a minimum of 4.0 credits with a minimum CGPA of 7.00.

Graduation

A candidate for the Certificate in Science and Policy (CSCP) must obtain a grade of C or higher in all courses taken at Carleton University under the CSCP program.

Requirements

1. 1.5 credits in:	1.5
ISAP 2001 [0.5] Foundations in Critical Inquiry	
PAPM 1001 [0.5] Policy: Analysis, Implementation, and Evaluation	
PSCI 2003 [0.5] Canadian Political Institutions	
2. 0.5 credit in ISCI 1001 for students in a non-science program or any 1000-level Approved Science course for students in a science or engineering program	0.5
3. 1.5 credits in:	1.5
ISAP 3003 [0.5] Science Communication	
ISAP 3004 [0.5] Science Policy	
PADM 4220 [0.5] Regulation and Public Policy or LAWS 3005 [0.5] Law and Regulation	
4. 0.5 credit in:	0.5
ISAP 3002 [0.5] Applications in Interdisciplinary Research	
5. 0.5 credit in Science Approved Electives for students in a non-science program or Public Affairs Approved Electives for students in a science or engineering program	0.5
6. 0.5 credit in Science or Public Affairs Approved Electives	0.5
Total Credits	5.0

Certificate in Science Communication

This section presents the requirements for programs in:

- Certificate in Science Communication

Certificate in Science Communication (5.0 credits)

May be taken concurrently with an Honours degree within the Faculty of Science, Faculty of Public Affairs, or the Faculty of Arts and Social Science, with completion of a minimum of 4.0 credits, and a minimum CGPA of 10.0. Enrollment is limited.

Graduation

A candidate for the Certificate in Science Communication must obtain a grade of C or higher in all courses taken

at Carleton University under the Certificate in Science Communication program.

Requirements

1. 0.5 credit in any 1000-level approved Science course	0.5
2. 0.5 credit in any Faculty of Science course	0.5
3. 1.5 credits in:	1.5
COMS 1001 [0.5] Foundations in Communication and Media Studies	
ISAP 2001 [0.5] Foundations in Critical Inquiry	
JOUR 1001 [0.5] Foundations: Journalism in Context or JOUR 1003 [0.5] Discovering Journalism: Traditional Tales to Tweets	
4. 1.0 credit in:	1.0
COMS 2500 [0.5] Communication and Science	
ISAP 3003 [0.5] Science Communication	
5. 0.5 credit from:	0.5
BIOL 1105 [0.5] Biological Methods, Analysis and Interpretation	
COMS 3412 [0.5] Communication and Health	
COMS 4407 [0.5] Communication and Critical Data Studies	
GEOG 2006 [0.5] Introduction to Quantitative Research	
HLTH 1002 [0.5] Health Science Communication	
HLTH 2001 [0.5] Health Research Methods and Skills	
HLTH 4701 [0.5] Knowledge Translation	
HLTH 4901 [0.5] Directed Studies in Health	
ISAP 2002 [0.5] Research Principles for Interdisciplinary Science	
ISAP 3004 [0.5] Science Policy	
ISAP 4901 [0.5] Directed Studies	
JOUR 2003 [0.5] Delivering Journalism: Innovators v. Imposters	
NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience	
NSCI 1000 [0.5] Seminar in Science	
IPAF 4900 [0.5] Research Experience Course	
6. 1.0 credit from:	1.0
ISAP 4907 [1.0] Capstone Course - Research Essay	
OR	
BIOL 4905 [1.0] Honours Workshop	
COMS 4908 [1.0] Honours Research Essay	
FOOD 4905 [1.0] Food Science Honours Workshop	
HLTH 4906 [1.0] Capstone course – Research Essay	
HLTH 4909 [1.0] Capstone Course – Field Placement and Research Project	
HLTH 4910 [1.0] Honours Individual Research Thesis	
JOUR 4303 [0.5] Specialized Journalism: Health and Science	
JOUR 4304 [0.5] Specialized Journalism: Environment and Science	
NEUR 4905 [1.0] Honours Workshop	
PAPM 4908 [1.0] Honours Research Essay	
7. 0.0 credit in:	

JOUR 4999/ ISAP 4999 [0.0]	Science Communication Certificate Professional Development Workshop
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Total Credits **5.0**

Note: For **item 5** and **item 6**, any directed study, research essay, thesis or project must be on an approved topic related to science communication.

Chemistry

This section presents the requirements for programs in:

- Chemistry B.Sc. Honours
- Chemistry with Concentration in Chemical Toxicology B.Sc. Honours
- Chemistry with Concentration in Nanotechnology B.Sc. Honours
- Chemistry B.Sc.
- Chemistry and Earth Sciences B.Sc. Combined Honours
- Chemistry and Physics B.Sc. Combined Honours
- Minor in Chemistry

Graduation Requirements

In addition to the requirements listed below, students must satisfy:

1. the University regulations (see *the Academic Regulations of the University* section of this Calendar),
2. the common regulations applying to all B.Sc. programs including those relating to Science Continuation and Breadth requirements (see *the Academic Regulations for the Bachelor of Science Degree*),

Students should consult with the Department when planning their program and selecting courses.

Program Requirements

Chemistry

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 6.5 credits in:	6.5
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry
CHEM 3100 [0.5]	Physical Chemistry II
CHEM 3101 [0.5]	Quantum Chemistry
CHEM 3201 [0.5]	Advanced Organic Chemistry I
CHEM 3503 [0.5]	Inorganic Chemistry I
CHEM 3504 [0.5]	Inorganic Chemistry II
2. 1.0 credit from:	1.0
CHEM 4907 [1.0]	Honours Essay and Research Proposal
CHEM 4908 [1.0]	Research Project and Seminar

3. 1.0 credit from:	1.0
CHEM 3106 [0.5]	Computational Chemistry Methods Laboratory
CHEM 3107 [0.5]	Experimental Methods in Nanoscience
CHEM 3205 [0.5]	Experimental Organic Chemistry
CHEM 3305 [0.5]	Advanced Analytical Chemistry Laboratory
4. 0.5 credit in:	0.5
CHEM 3401 [0.5]	Physical Aspects of Biochemistry (or any BIOC course)
5. 1.0 credit in CHEM at the 4000 level, or 0.5 credit in CHEM at the 4000 level and:	1.0
BIOC 3102 [0.5]	General Biochemistry II
6. 0.5 credit in CHEM at the 3000 or 4000 level	0.5
B. Credits Not Included in the Major CGPA (9.5 credits)	
7. 2.0 credits in:	2.0
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1107 [0.5]	Linear Algebra I
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
or MATH 2007 [0.5]	Elementary Calculus II
MATH 2008 [0.5]	Intermediate Calculus
8. 1.0 credit from:	1.0
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
& PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
& PHYS 1008 [0.5]	Elementary University Physics II
9. 0.5 credit in Science Continuation (not CHEM)	0.5
10. 1.0 credit in Science Faculty Electives at the 1000 level	1.0
11. 2.0 credits in Science Faculty Electives or Science Continuation Courses	2.0
12. 0.5 credit in:	0.5
NSCI 1000 [0.5]	Seminar in Science (or approved courses outside the faculties of Science and Engineering and Design)
13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000 if not used above)	1.5
14. 1.0 credit in free elective.	1.0
Total Credits	20.0

Chemistry

with Concentration in Chemical Toxicology

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 10.0 credits in:	10.0
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry

CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
BIOL 2200 [0.5]	Cellular Biochemistry	
CHEM 3100 [0.5]	Physical Chemistry II	
CHEM 3201 [0.5]	Advanced Organic Chemistry I	
CHEM 3503 [0.5]	Inorganic Chemistry I	
BIOC 3101 [0.5]	General Biochemistry I	
CHEM 3800 [0.5]	The Chemistry of Environmental Pollutants	
FOOD 4103 [0.5]	Food Safety Risk Assessment	
CHEM 4305 [0.5]	Environmental Chemistry and Toxicology	
BIOC 4708 [0.5]	Principles of Toxicology	
CHEM 4908 [1.0]	Research Project and Seminar	
or CHEM 4907 [1.0]	100 hours Essay and Research Proposal	
2. 0.5 credits from:		0.5
CHEM 3205 [0.5]	Experimental Organic Chemistry	
CHEM 3305 [0.5]	Advanced Analytical Chemistry Laboratory	
BIOC 3103 [0.5]	Practical Biochemistry I	
3. 1.0 credit in CHEM or BIOC at the 3000 or 4000 level		1.0
B. Credits Not Included in the Major CGPA (8.5 credits)		
4. 1.5 credits in:		1.5
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1107 [0.5]	Linear Algebra I	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
or MATH 2007 [0.5]	Elementary Calculus II	
5. 1.0 credit from:		1.0
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
6. 1.0 credit in:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
7. 0.5 credits in:		0.5
FOOD 2004 [0.5]	Scientific Communication in Food Science	
8. 1.5 credits in Science Continuation Courses (not CHEM)		1.5
9. 2.0 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)		2.0
10. 1.0 credit in free electives		1.0
Total Credits		20.0

Chemistry with Concentration in Nanotechnology B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 9.0 credits in:		9.0
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
CHEM 2103 [0.5]	Physical Chemistry I	
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2204 [0.5]	Organic Chemistry II	

CHEM 2302 [0.5]	Analytical Chemistry I	
CHEM 2303 [0.5]	Analytical Chemistry II	
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry	
CHEM 3100 [0.5]	Physical Chemistry II	
CHEM 3101 [0.5]	Quantum Chemistry	
CHEM 3107 [0.5]	Experimental Methods in Nanoscience	
CHEM 3201 [0.5]	Advanced Organic Chemistry I	
CHEM 3503 [0.5]	Inorganic Chemistry I	
CHEM 3600 [0.5]	Introduction to Nanotechnology	
CHEM 4103 [0.5]	Surface Chemistry and Nanostructures	
CHEM 4104 [0.5]	Physical Methods of Nanotechnology	
CHEM 4908 [1.0]	Research Project and Seminar	
2. 1.0 credit from:		1.0

CHEM 3106 [0.5]	Computational Chemistry Methods Laboratory	
CHEM 3205 [0.5]	Experimental Organic Chemistry	
CHEM 3305 [0.5]	Advanced Analytical Chemistry Laboratory	
CHEM 3504 [0.5]	Inorganic Chemistry II	
3. 0.5 credit in:		0.5
CHEM 3401 [0.5]	Physical Aspects of Biochemistry (or any BIOC course)	

B. Credits Not Included in the Major CGPA (9.5 credits)

4. 2.0 credits in:		2.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1107 [0.5]	Linear Algebra I	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
or MATH 2007 [0.5]	Elementary Calculus II	
MATH 2008 [0.5]	Intermediate Calculus	
5. 1.0 credit from:		1.0
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
6. 0.5 credit in Science Continuation (not CHEM)		0.5
7. 1.0 credit in Science Faculty Electives at the 1000 level		1.0
8. 2.0 credits in Science Faculty Electives or Science Continuation Courses		2.0
9. 0.5 credit in NSCI 1000 or approved courses outside the faculties of Science and Engineering and Design		0.5
10. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)		1.5
11. 1.0 credit in free electives.		1.0
Total Credits		20.0

Chemistry B.Sc. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 5.0 credits in:		5.0
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	

CHEM 2103 [0.5]	Physical Chemistry I	
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2204 [0.5]	Organic Chemistry II	
CHEM 2302 [0.5]	Analytical Chemistry I	
CHEM 2303 [0.5]	Analytical Chemistry II	
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry	
CHEM 3100 [0.5]	Physical Chemistry II	
CHEM 3101 [0.5]	Quantum Chemistry	
2. 0.5 credit from:		0.5
CHEM 3106 [0.5]	Computational Chemistry Methods Laboratory	
CHEM 3205 [0.5]	Experimental Organic Chemistry	
CHEM 3305 [0.5]	Advanced Analytical Chemistry Laboratory	
CHEM 3503 [0.5]	Inorganic Chemistry I	
CHEM 3107 [0.5]	Experimental Methods in Nanoscience	
3. 0.5 credit in CHEM at the 3000-level		0.5
B. Credits Not Included in the Major CGPA (9.0 credits)		
4. 2.0 credits in:		2.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1107 [0.5]	Linear Algebra I	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
or MATH 2007 [0.5]	Elementary Calculus II	
MATH 2008 [0.5]	Intermediate Calculus	
5. 1.0 credit from:		1.0
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
6. 0.5 credit in Science Continuation (not CHEM)		0.5
7. 1.0 credit in Science Faculty Electives at the 1000 level		1.0
8. 1.5 credit in Science Faculty Electives or Science Continuation Courses		1.5
9. 0.5 credit in NSCI 1000 or approved courses outside the faculties of Science and Engineering and Design		0.5
10. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)		1.5
11. 1.0 credit in free electives.		1.0
Total Credits		15.0

Chemistry and Earth Sciences

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.5 credits)

1. 4.0 credits in:		4.0
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
CHEM 2103 [0.5]	Physical Chemistry I	
CHEM 2302 [0.5]	Analytical Chemistry I	
CHEM 2303 [0.5]	Analytical Chemistry II	
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry	
CHEM 3100 [0.5]	Physical Chemistry II	

CHEM 3503 [0.5]	Inorganic Chemistry I	
2. 1.0 credit in CHEM at the 4000-level		1.0
3. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
4. 3.0 credits in:		3.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2105 [0.5]	Geodynamics	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
ERTH 2802 [0.5]	Field Geology I	
5. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems (See Note, below)	
6. 2.0 credits in:		2.0
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3207 [0.5]	Metamorphic Petrology and Processes	
ERTH 3806 [0.5]	Structural Geology	
7. 1.0 credit in EARTH at the 4000-level		1.0
8. 1.0 credit from:		1.0
CHEM 4907 [1.0]	Honours Essay and Research Proposal	
CHEM 4908 [1.0]	Research Project and Seminar	
ERTH 4908 [1.0]	Honours Thesis	
ERTH 4909 [0.5]	Research in Earth Sciences (and 0.5 credit in EARTH at the 4000-level)	
B. Credits Not Included in the Major CGPA (6.5 credits)		
9. 1.0 credit in:		1.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1107 [0.5]	Linear Algebra I	
10. 0.5 credit from:		0.5
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2007 [0.5]	Elementary Calculus II	
11. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
12. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
13. 1.0 credit from:		1.0
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
14. 0.5 credit in:		0.5
BIOL 1104 [0.5]	Foundations of Biology II	
15. 0.5 credit in Science Faculty Electives (not CHEM or EARTH)		0.5
16. 0.5 credit in:		0.5

NSCI 1000 [0.5]	Seminar in Science (or approved course outside the faculties of Science and Engineering and Design)	
17. 1.5 credits in	approved courses outside the faculties of Science and Engineering and Design	1.5

Total Credits **20.0**

Note: for **Item 5** above, EARTH 3203 is required if prerequisite conditions are met.

Chemistry and Physics

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 1.0 credit from: 1.0

PHYS 1001 [0.5] Foundations of Physics I
& PHYS 1002 [0.5] Foundations of Physics II (recommended)

PHYS 1003 [0.5] Introductory Mechanics and
& PHYS 1004 [0.5] Thermodynamics
Introductory Electromagnetism and
Wave Motion

PHYS 1007 [0.5] Elementary University Physics I
& PHYS 1008 [0.5] Elementary University Physics II (with an average grade of B- or higher)

2. 3.0 credits in: 3.0

PHYS 2202 [0.5] Wave Motion and Optics

PHYS 2305 [0.5] Electricity and Magnetism

PHYS 2604 [0.5] Modern Physics I

PHYS 3007 [0.5] Third Year Physics Laboratory:
Selected Experiments and
Seminars

PHYS 3701 [0.5] Elements of Quantum Mechanics

PHYS 3807 [0.5] Mathematical Physics I

3. 1.5 credits from: 1.5

PHYS 3308 [0.5] Electromagnetism

PHYS 3606 [0.5] Modern Physics II

PHYS 3802 [0.5] Advanced Dynamics

PHYS 4707 [0.5] Introduction to Quantum Mechanics I

4. 0.5 credit in PHYS at the 4000 level 0.5

5. 5.0 credits in: 5.0

CHEM 1001 [0.5] General Chemistry I

CHEM 1002 [0.5] General Chemistry II

CHEM 2103 [0.5] Physical Chemistry I

CHEM 2203 [0.5] Organic Chemistry I

CHEM 2204 [0.5] Organic Chemistry II

CHEM 2501 [0.5] Introduction to Inorganic and
Bioinorganic Chemistry

CHEM 3100 [0.5] Physical Chemistry II

CHEM 3102 [0.5] Methods of Computational
Chemistry

CHEM 3503 [0.5] Inorganic Chemistry I

CHEM 4102 [0.5] Advanced Topics in Physical
Chemistry II

6. 0.5 credit from: 0.5

CHEM 3106 [0.5] Computational Chemistry Methods
Laboratory

CHEM 3107 [0.5] Experimental Methods in
Nanoscience

7. 0.5 credit in CHEM at the 4000 level 0.5

8. 1.0 credit from: 1.0

CHEM 4908 [1.0] Research Project and Seminar

PHYS 4909 [1.0] Fourth-Year Project

PHYS 4907 plus 0.5 credit in PHYS at the 4000 level

PHYS 4908 plus 0.5 credit in PHYS at the 4000 level

B. Credits Not Included in the Major CGPA (7.0 credits)

9. 3.0 credits in: 3.0

MATH 1004 [0.5] Calculus for Engineering or Physics

MATH 1005 [0.5] Differential Equations and Infinite
Series for Engineering or Physics

MATH 1104 [0.5] Linear Algebra for Engineering or
Science

MATH 2004 [0.5] Multivariable Calculus for
Engineering or Physics

STAT 3502 [0.5] Probability and Statistics

MATH 3705 [0.5] Mathematical Methods I

10. 0.5 credit from: 0.5

COMP 1005 [0.5] Introduction to Computer Science I

ECOR 1606 [0.5] Problem Solving and Computers

11. 0.5 credit from: 0.5

MATH 3800 [0.5] Mathematical Modeling and
Computational Methods

ECOR 2606 [0.5] Numerical Methods

12. 0.5 credit from: 0.5

NSCI 1000 [0.5] Seminar in Science

Approved courses outside the faculties of Science and
Engineering and Design

13. 1.5 credits in approved courses outside the faculties
of Science and Engineering and Design (may include
NSCI 1000, if not used above) 1.5

14. 1.0 credit in free electives. 1.0

Total Credits **20.0**

Minor in Chemistry (4.0 credits)

The Minor in Chemistry is available to degree students registered in programs other than those associated with the Department of Chemistry.

Requirements

1. 1.0 credit from: 1.0

CHEM 1001 [0.5] General Chemistry I
& CHEM 1002 [0.5] General Chemistry II

or

CHEM 1005 [0.5] Elementary Chemistry I
& CHEM 1006 [0.5] Elementary Chemistry II

with a grade of B- or higher in CHEM 1006

2. 3.0 credits in Chemistry at 2000-level or higher 3.0

3. The remaining requirements of the major discipline(s)
and degree must be satisfied.

Total Credits **4.0**

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the university regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
- 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor,

Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology
Chemistry	
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry
Earth Sciences	
ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology
Food Sciences	
FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology
Geography	
GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties
Neuroscience	
NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)
BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5] Education Research in Biology
CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs

CHEM 1004 [0.5] Drugs and the Human Body

CHEM 1007 [0.5] Chemistry of Art and Artifacts

ERTH 1010 [0.5] Our Dynamic Planet Earth

ERTH 1011 [0.5] Evolution of the Earth

ERTH 2415 [0.5] Natural Disasters

ISCI 1001 [0.5] Introduction to the Environment

ISCI 2000 [0.5] Natural Laws

ISCI 2002 [0.5] Human Impacts on the Environment

MATH 0107 [0.5] Algebra and Geometry

PHYS 1901 [0.5] Planetary Astronomy

PHYS 1902 [0.5] From our Star to the Cosmos

PHYS 1905 [0.5] Physics Behind Everyday Life

PHYS 2903 [0.5] Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students

MATH 0005 [0.5] Precalculus: Functions and Graphs

MATH 0006 [0.5] Precalculus: Trigonometric Functions and Complex Numbers

MATH 1009 [0.5] Mathematics for Business

MATH 1119 [0.5] Linear Algebra: with Applications to Business

MATH 1401 [0.5] Elementary Mathematics for Economics I

MATH 1402 [0.5] Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic

performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op

option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Chemistry: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Chemistry students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: CHEM 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite

averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus

and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Chemistry (CHEM) Courses

CHEM 0999 [0.0 credit]

Chemistry Matters

CHEM 1001 [0.5 credit]

General Chemistry I

This maths-intensive course covers introduction to periodicity, gas laws, equilibrium, bonding, electrochemistry, and organic chemistry. This is a specialist course for students intending to take second year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1005, CHEM 1101.

Prerequisite(s): Ontario 4U/M in Chemistry or equivalent. Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1002 [0.5 credit]

General Chemistry II

This maths-intensive course covers an introduction to solution chemistry, acids and bases, thermodynamics, and kinetics. Specialist course for students intending to take second year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1006.

Prerequisite(s): CHEM 1005 with a minimum grade of B-, or CHEM 1001.

Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1003 [0.5 credit]

The Chemistry of Food, Health and Drugs

Aspects of chemistry relating to food, food additives, drugs (illicit and beneficial) and their relation to metabolism and health. Topics may include: proteins, carbohydrates, fats, vitamins, cofactors, enzymes, steroids, electrolyte and pH balance, trace elements. Available only as a free option for Science students.

Prerequisite(s): a course in Chemistry (e.g. Ontario Grade 11).

Lectures three hours a week.

CHEM 1004 [0.5 credit]

Drugs and the Human Body

No science background required. Topics include drug origins, laws, metabolism and dependence, pharmaceutical industry, over the counter medications, placebo effect, antibiotics, pain killers, stimulants, alcohol, marijuana, hallucinogens, birth control and steroids.

Students in Science programs may use this course only as a free elective.

Lectures three hours a week.

CHEM 1005 [0.5 credit]

Elementary Chemistry I

Introduction to stoichiometry, periodicity, gas laws, equilibrium, bonding, and organic chemistry with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1001 or who are not intending to take upper year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, CHEM 1101.

Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1006 [0.5 credit]**Elementary Chemistry II**

Introduction to solution chemistry, acids and bases, thermodynamics, and kinetics, with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1002 or who are not intending to take upper year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1002.

Prerequisite(s): CHEM 1001 or CHEM 1005.

Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1007 [0.5 credit]**Chemistry of Art and Artifacts**

The chemistry of arts and artifacts created throughout the ages (Paleolithic, Neolithic, Bronze, Iron, Middle and Modern) will be examined. Basic chemical principles will be explored and reviewed when required. Students in Science programs may use this course only as a free elective.

Lectures three hours a week.

CHEM 1101 [0.5 credit]**Chemistry for Engineering Students**

Topics include stoichiometry, atomic and molecular structure, thermodynamics and chemical equilibrium, acid-base chemistry, carbon dioxide in water, alkalinity, precipitation, electrochemistry, kinetics and basic organic chemistry. Laboratory component emphasizes techniques and methods of basic experimental chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, and CHEM 1005.

Prerequisite(s): Ontario 4U/M in Chemistry or equivalent.

Lectures three hours a week, laboratory three hours every other week.

CHEM 2103 [0.5 credit]**Physical Chemistry I**

Basic principles of thermodynamics. Development of the laws of thermodynamics, enthalpy, entropy and free energy, and their applications to phase equilibria, electrochemistry, and kinetics. Brief introduction to quantum mechanics.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 2300, CHEM 2101 (no longer offered) and CHEM 2102 (no longer offered).

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002, MATH 1004, MATH 1107, PHYS 1007 and PHYS 1008 or PHYS 1003 and PHYS 1004.

Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 2203 [0.5 credit]**Organic Chemistry I**

Structure, organization, and scope of organic chemistry including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification. Training in the handling and purification of organic compounds, organic chemical reactions, and the use of infrared spectroscopy.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 2207.

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.

Lectures three hours a week and laboratory three hours a week.

CHEM 2204 [0.5 credit]**Organic Chemistry II**

Further discussion of chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of the chemical reactions of organic functional groups. Laboratory experience in organic chemical reactions, use of infrared spectroscopy and other techniques to determine the structure of unknown organic compounds.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 2208 and CHEM 2206.

Prerequisite(s): CHEM 2203.

Lectures three hours a week and laboratory three hours a week.

CHEM 2207 [0.5 credit]**Introduction to Organic Chemistry I**

Structure, organization, and scope of organic chemistry, including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification.

Precludes additional credit for CHEM 2203.

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.

Lectures three hours a week.

CHEM 2208 [0.5 credit]**Introduction to Organic Chemistry II**

Further discussion of the chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of chemical reactions of the organic functional groups.

Precludes additional credit for CHEM 2204 and CHEM 2206.

Prerequisite(s): CHEM 2207 or CHEM 2203.

Lectures three hours a week.

CHEM 2302 [0.5 credit]**Analytical Chemistry I**

Introduction to quality assurance measures, calibration strategies and the fundamentals of solution-based analytical measurement processes. Qualitative and quantitative analysis using potentiometric and electrolysis techniques including ion selective electrodes, coulometry, amperometry and voltammetry. Redox, acid/base and EDTA titrations in the context of various buffer systems. Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2300.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002 or CHEM 1101 and (MATH 1007 or MATH 1004).
Lectures three hours a week, laboratory three hours a week.

CHEM 2303 [0.5 credit]**Analytical Chemistry II**

Spectrophotometric analysis using Uv-Vis, fluorescence and FTIR instrumentation. Modern separation methods including CE, GC and LC. Recent techniques and applications using mass spectrometry. Applications of all of the above to real-world analysis including the advancement of environmental, biochemistry and health-related research. Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2300 and CHEM 2301.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002, or CHEM 1101, and (MATH 1007 or MATH 1004).
Lectures three hours a week, laboratory three hours a week.

CHEM 2400 [0.5 credit]**Independent Research I**

Students carry out a laboratory research project under the supervision of a faculty member from the Department of Chemistry. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor. Includes: Experiential Learning Activity
Prerequisite(s): restricted to Honours students having second-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.
Laboratory research for at least three hours a week over two terms.

CHEM 2501 [0.5 credit]**Introduction to Inorganic and Bioinorganic Chemistry**

The basic concepts of inorganic chemistry, including the origins of elemental properties, simple theories of bonding, intermolecular forces, main group and transition metal chemistry, coordination chemistry. Inorganic ions in biochemistry, including ion transport and storage, oxygen carriers and hydrolases, redox proteins. Precludes additional credit for CHEM 3506.
Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.
Lectures three hours a week, tutorial one hour a week.

CHEM 2800 [0.5 credit]**Foundations for Environmental Chemistry**

A basis of chemistry needed to understand the environment: composition of the atmosphere and natural waters; equilibrium; surface properties; kinetics and spectroscopy; physical and chemical properties of chemicals in the environment. Limited enrolment course. Priority is given to students in Environmental Science/Engineering. Includes: Experiential Learning Activity
Prerequisite(s): CHEM 1006 with a minimum grade of B- or CHEM 1002, or CHEM 1101, (MATH 1007 or MATH 1004).
Lectures three hours a week, laboratory three hours a week.

CHEM 3100 [0.5 credit]**Physical Chemistry II**

Further development of thermodynamic equations and their applications to mass changes, chemical potential, chemical equilibria, transport properties and advanced phase equilibria. Use of partial differentials and development of Maxwell's relations will also be covered. Includes: Experiential Learning Activity
Precludes additional credit for CHEM 2102.
Prerequisite(s): CHEM 2103 or BIOC 2300, and MATH 1005 or MATH 2007.
Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 3101 [0.5 credit]**Quantum Chemistry**

Classical equations of motion, harmonic oscillator, diatomic and polyatomic molecules, molecular mechanics, quantum mechanics, Schrödinger equation and wave functions, vibrational spectra, hydrogen atom, quantum numbers, electronic spectra, bonding in small molecules. Includes: Experiential Learning Activity
Prerequisite(s): CHEM 2103, MATH 2007 and MATH 2008.
Lectures three hours a week, tutorial one hour per week.

CHEM 3102 [0.5 credit]**Methods of Computational Chemistry**

Molecular orbital theory of organic and inorganic chemistry. Applications of computational chemistry to chemical bonding, aromaticity, molecular spectra. Semi-empirical and ab initio electronic structure theory. Comparison of theoretical methods used to obtain molecular properties. Introduction to statistical thermodynamics.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 3101 or PHYS 3701.

Lectures and problems three hours a week.

CHEM 3106 [0.5 credit]**Computational Chemistry Methods Laboratory**

Industry-standard quantum chemistry software is used for Hartree-Fock, density functional, and post Hartree-Fock correlation calculations. Results are applied to problems in molecular structure, thermodynamics, vibrational spectroscopy, and kinetics. The UNIX operating system, Bourne-shell programming, and Python scripting are also introduced.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 3102 (may be taken concurrently).

Laboratory three hours a week.

CHEM 3107 [0.5 credit]**Experimental Methods in Nanoscience**

Thin film production and characterization, scanning electron microscopy, synthesis of metal nanoparticles and particle size determination, computational modeling of nanostructures.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 3100.

Laboratory four hours a week.

CHEM 3201 [0.5 credit]**Advanced Organic Chemistry I**

Instrumental methods for determining organic structures. Selected organic reactions with emphasis on mechanisms and reactive intermediates.

Prerequisite(s): CHEM 2204 or CHEM 2206 or CHEM 2208.

Lectures three hours a week, tutorial one and a half hours per week.

CHEM 3202 [0.5 credit]**Advanced Organic Chemistry II**

Continued mechanistic survey of additional organic reactions with emphasis on synthetic usefulness and stereochemistry. Interspersed with selected topics such as instrumental methods, photochemistry, literature of organic chemistry, natural and synthetic polymers, heterocycles, terpenes and alkaloids.

Prerequisite(s): CHEM 3201 or equivalent.

Lectures three hours a week, tutorial one and a half hours per week.

CHEM 3205 [0.5 credit]**Experimental Organic Chemistry**

A laboratory-based course including advanced concepts and techniques in organic synthesis, structure determination, and the rates and mechanisms of reactions. Students are responsible for literature surveys, acquisition of theoretical background, and design of experimental procedures.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 2204 or CHEM 2206 and CHEM 3201.

Laboratory four hours a week.

CHEM 3305 [0.5 credit]**Advanced Analytical Chemistry Laboratory**

Advanced instrumentally based techniques of analysis. Emphasis on identification and quantitation of low-level contaminants in environmental matrices using chromatographic and spectroscopic methods, including sampling, cleanup, measurement and reporting of results.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 2302 or CHEM 2303.

Laboratory four hours a week.

CHEM 3400 [0.5 credit]**Independent Research II**

Students carry out a laboratory research project supervised by a Chemistry faculty member. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor; expectations of student performance and evaluation exceed that of CHEM 2400.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to Honours students having third-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.

Laboratory research for at least three hours a week over two terms.

CHEM 3401 [0.5 credit]**Physical Aspects of Biochemistry**

Chemistry, structure and function of nucleic acids, proteins, carbohydrates, and lipids. Thermodynamics of biological systems, chemical mechanisms and organic transformations. Intended for Chemistry Majors.

Precludes additional credit for BIOC 2200, BIOL 2200, and BIOC 3101.

Prerequisite(s): CHEM 2103 and CHEM 2204.

Lectures three hours a week.

CHEM 3503 [0.5 credit]**Inorganic Chemistry I**

Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 3507.

Prerequisite(s): CHEM 2501.

Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3504 [0.5 credit]**Inorganic Chemistry II**

Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 3508.

Prerequisite(s): CHEM 3503.

Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3507 [0.5 credit]**General Inorganic Chemistry I**

Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices.

Precludes additional credit for CHEM 3503.

Prerequisite(s): CHEM 2501.

Lectures three hours a week, tutorial one hour a week.

CHEM 3508 [0.5 credit]**General Inorganic Chemistry II**

Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis.

Precludes additional credit for CHEM 3504.

Prerequisite(s): CHEM 3503 or CHEM 3507.

Lectures three hours a week, tutorial one hour a week.

CHEM 3600 [0.5 credit]**Introduction to Nanotechnology**

Nanoscale units, bulk vs. nanoproperties, electrons, atoms and ions, metals, band structure, electrical conduction, biosystems, molecular devices, quantum mechanics and optics, tools for measuring nanostructures. Production of nanostructures: self assembly, nanoscale crystal growth, polymerization. Applications to sensors, magnets, electronics, drug delivery. Toxicology of nanostructures.

Prerequisite(s): CHEM 3100.

Lectures three hours a week.

CHEM 3700 [0.5 credit]**Industrial Applications of Chemistry**

Uses of chemistry in a number of industries: fertilizers, electrochemical, metallurgical, petrochemical, pulp and paper, plastics, pharmaceutical. Interaction of chemistry with economic, political, engineering, environmental, health, legal considerations. Guest lecturers.

Prerequisite(s): (BIOC 2300 or CHEM 2103) and one of CHEM 2207 or CHEM 2203.

Lecture three hours a week.

CHEM 3800 [0.5 credit]**The Chemistry of Environmental Pollutants**

Inorganic and organic environmental pollutants: their toxicology, production, use pattern and known effects on the environment. Aspects of risk and regulation. Chemistry involved in water and sewage treatment.

Prerequisite(s): CHEM 2207 or CHEM 2203 or CHEM 2800.

Lectures three hours a week.

CHEM 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

CHEM 4100 [0.5 credit]**Advanced Topics in Physical Chemistry I**

Principles of Group Theory as applied to Chemistry. Point groups, character tables, symmetry orbitals, molecular orbitals, aromaticity, allowed and forbidden reactions, sandwich complexes. Selection rules in spectroscopy, molecular vibrations.

Prerequisite(s): CHEM 3102.

CHEM 4102 [0.5 credit]**Advanced Topics in Physical Chemistry II**

Statistical thermodynamics, energy states, equilibrium, partition functions for diatomic molecules. Chemical kinetics: rate laws, solution of differential equations, transition state theory, bimolecular reactions in gases and in solution, chain reactions, catalysis, atmospheric chemical reactions and photochemistry.

Prerequisite(s): CHEM 3102.

Lectures and seminars three hours a week.

CHEM 4103 [0.5 credit]**Surface Chemistry and Nanostructures**

Surface structure, thermodynamics and kinetics, specifically regarding adsorption/desorption and high vacuum models. Nanoscale structures and their formation, reactivity and characterization. Thin films, carbon nanotubes, self-assembled monolayers and supramolecular aggregates.

Prerequisite(s): CHEM 3600 and CHEM 3107.

Also offered at the graduate level, with different requirements, as CHEM 5108, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4104 [0.5 credit]**Physical Methods of Nanotechnology**

An overview of methods used in nanotechnology. Principles of scanning probe techniques ranging from surface physics to biology. State of the art methods to create nanostructures for future applications in areas such as nanolithography, nanoelectronics, nano-optics, data storage and bio-analytical nanosystems.

Prerequisite(s): CHEM 3600 and CHEM 3107.

Lectures three hours a week.

CHEM 4201 [0.5 credit]**Macromolecular Nanotechnology**

Biological and synthetic macromolecules related to nanoscale phenomena. Challenges and opportunities associated with natural and synthetic polymers on the nanoscale. Molecular recognition, self-assembled nanostructures, scaffolds and templates, functional nanomaterials, amphiphilic architectures, nanocomposites, and nanomachines. Applications to sensing, biomaterials, drug delivery, and polymer based devices.

Prerequisite(s): CHEM 3600 or permission of the department.

Also offered at the graduate level, with different requirements, as CHEM 5207, CHEM 5208, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4202 [0.5 credit]**Advanced Topics in Organic Chemistry I**

Topics include 2-dimensional ^1H and ^{13}C NMR spectroscopy and structure determination of complex organic molecules.

Prerequisite(s): CHEM 3201.

Also offered at the graduate level, with different requirements, as CHEM 5407, for which additional credit is precluded.

CHEM 4203 [0.5 credit]**Synthetic Organic Chemistry**

The application of reactions to the synthesis of organic molecules. Emphasis on design of synthetic sequences, new reagents, and stereoselectivity. Topics include advanced methods for synthesis and reactions of alkenes, carbonyls, and enolates, functional group interconversion, oxidation and reduction, protecting groups, rearrangements, and metal-catalyzed cross-coupling.

Prerequisite(s): CHEM 3201 and CHEM 3202.

Lectures and seminars three hours a week.

CHEM 4204 [0.5 credit]**Organic Polymer Chemistry**

Introduction to basic principles of polymer chemistry, industrial and synthetic polymers, different types of polymerization and polymer characterization. Study of commodity plastics, engineering thermoplastics, and specialty polymers, with emphasis on their synthesis.

Prerequisite(s): CHEM 3201 or equivalent.

Also offered at the graduate level, with different requirements, as CHEM 5406, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4205 [0.5 credit]**Reactivity and Mechanism in Organic Chemistry**

The application of frontier molecular orbital theory (HOMO-LUMO interactions) to organic reactions, including thermal and photochemical cycloadditions of pi-systems (including 1,3-dipoles) and rearrangements. Reactions of radicals and carbenes; conformational analysis, stereochemical effects, and methods for the determination of reaction mechanisms.

Prerequisite(s): CHEM 3202 and CHEM 3503 (may be taken concurrently).

Lectures and seminars three hours a week.

CHEM 4206 [0.5 credit]**Natural Products Chemistry**

A survey of the major classes of natural products with respect to their structural elucidation, synthesis, biosynthesis and bioactivity, with emphasis on compounds that have medicinal importance.

Prerequisite(s): CHEM 3201 and CHEM 3202.

Lectures and seminars three hours a week.

CHEM 4301 [0.5 credit]**Advanced Topics in Analytical Chemistry I**

Analytical chemistry of trace and ultratrace elements/compounds. Special requirements for quantitative determination by various instrumental methods. Control of contamination and blanks. Analytical method development to improve selectivity, sensitivity and detection limit. Strength and limitations of each instrument. Optimization of all operating parameters.

Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303.

Also offered at the graduate level, with different requirements, as CHEM 5607, for which additional credit is precluded.

Lectures and seminars three hours a week.

CHEM 4302 [0.5 credit]**Advanced Topics in Analytical Chemistry II**

Solutions and separations in analytical chemistry. Stability of aqueous solutions of standards and samples. Complex formation, multi-step and competing equilibria and their application to the design of selective methods of separation and determination. Electroanalytical techniques. Electroanalytical chemistry of aqueous solutions. Phase equilibria and solvent extraction. Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303.

Lectures and seminars three hours a week.

CHEM 4304 [0.5 credit]**Advanced Applications In Mass Spectrometry**

Detailed breakdown of the physical, electrical and chemical operation of mass spectrometers. Applications in MS ranging from the analysis of small molecules to large biological macromolecules. Descriptions of the use of mass spectrometry in industry as well as commercial opportunities in the field.

Prerequisite(s): CHEM 2103 or BIOC 2300, and one of CHEM 2302 or CHEM 2303.

Also offered at the graduate level, with different requirements, as CHEM 5109, for which additional credit is precluded.

Lectures and seminars three hours a week.

CHEM 4305 [0.5 credit]**Environmental Chemistry and Toxicology**

Overview of environmental chemistry and toxicology principles including chemical sources, fate, and effects in the environment. Examining organic reactions occurring in abiotic environments and biological systems, and studying aspects of toxicant disposition and biotransformation. Emphasis on contemporary problems in human health and the environment.

Prerequisite(s): CHEM 2203 or CHEM 2207, and CHEM 2800 or CHEM 2103, or BIOC 3101 or permission of the department.

Also offered at the graduate level, with different requirements, as CHEM 5606, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4406 [0.5 credit]**Pharmaceutical Drug Design**

Important elements of rational drug design. Ligand-receptor interactions, structure-activity relationships, molecular modeling of pharmacophores, structure and mechanism-based approaches to drug design. Enzyme inhibition in chemotherapy and design of anti-viral drugs. Includes: Experiential Learning Activity

Prerequisite(s): CHEM 2103 and (CHEM 2203 or CHEM 2207), BIOC 3101 and (BIOC 3102 or BIOC 3008). Lectures and laboratory five hours a week.

CHEM 4407 [0.5 credit]**Polymer Modeling**

Polymer architectures; Flexible and rigid rod polymers; Rotational isomeric states (RIS); Molecular mechanics, Ramachandran Map, Helix parameters; internal and external parameters; regular and random coil structures; molecular dynamics; calculation of end-to-end distance, NMR chemical shifts; conformational entropy and properties.

Prerequisite(s): MATH 1107 and CHEM 2204 or permission of the department.

Lectures three hours per week.

CHEM 4502 [0.5 credit]**Radiochemistry**

A study of nuclear stability and decay; chemical studies of nuclear phenomena. Applications of radioactivity.

Prerequisite(s): CHEM 2302, CHEM 2303, and CHEM 3100, or permission of the Department.

Also offered at the graduate level, with different requirements, as CHEM 5905, for which additional credit is precluded.

Lectures and seminars three hours a week.

CHEM 4503 [0.5 credit]**Advanced Topics in Inorganic Chemistry I**

A quantitative basis for ligand field theory; unreal and real wavefunctions of d-orbitals; derivation of the energies of d-orbitals using variational principle, secular determinants, and ligand field operators; the effect of ligand field on free ion term symbols, wavefunction descriptions of terms symbols; applications.

Prerequisite(s): CHEM 3504 and CHEM 3101.

Lectures three hours a week.

CHEM 4504 [0.5 credit]**Advanced Topics in Inorganic Chemistry II**

Reactivity of inorganic coordination compounds.

Thermodynamic and kinetic factors affecting reactivity. Industrial and biochemical processes catalyzed by metal coordination compounds. Experimental methodologies, data analysis and rate law evaluation used to obtain reaction mechanisms leading to improved methods of catalysis.

Prerequisite(s): CHEM 3504 or equivalent.

Lectures three hours a week.

CHEM 4505 [0.5 credit]**Application of Physical Methods to Electron Transfer Chemistry**

Spectroscopic techniques (i.e. UV-visible NIR, IR, EPR) and electrochemistry methods that are used to study photochemical and thermal intermolecular and intramolecular electron transfer in transition metal complexes are presented. Electron transfer theory and redox-active (non-innocent) ligands are discussed.

Prerequisite(s): CHEM 3504.

Lectures three hours a week.

CHEM 4700 [0.5 credit]**Special Topics in Chemistry**

A topic of current interest in any branch of chemistry. Only one special topics course may be presented for credit.

Prerequisite(s): permission of the Department.

CHEM 4800 [0.5 credit]**Atmospheric Chemistry**

Properties of natural atmospheric constituents; biogeochemical cycles involving gases; chemical reactions in the atmosphere; anthropogenic atmospheric pollutants (e.g., chlorofluorocarbons, sulphur and nitrogen oxides, photochemical smog sources and effects on the biosphere. Relation between the structure of molecules and their spectral and reactive properties.

Prerequisite(s): CHEM 2103 or CHEM 2800.

Lectures three hours a week.

CHEM 4907 [1.0 credit]**Honours Essay and Research Proposal**

Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and oral poster presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 4908, FOOD 4907 and FOOD 4908.

Prerequisite(s): fourth year standing in an Honours Chemistry program and permission of the department.

CHEM 4908 [1.0 credit]**Research Project and Seminar**

Senior students in Honours Chemistry carry out a research project under the direction of one of the members of the Department. A written report and an oral presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 4907, FOOD 4907 and FOOD 4908.

Prerequisite(s): any two of CHEM 3106, CHEM 3107, CHEM 3205, CHEM 3305 and CHEM 3504 and permission of the department.

Laboratory and associated work equivalent to at least eight hours a week for two terms.

Childhood and Youth Studies

This section presents the requirements for programs in:

- Childhood and Youth Studies B.A. Honours
- Childhood and Youth Studies B.A.

Childhood and Youth Studies**B.A. Honours (20.0 credits)****Requirements:****A. Credits Included in the Major CGPA (8.0 credits)**

1. 1.0 credits in:	1.0
CHST 1003 [1.0]	Introduction to Childhood and Youth Studies
2. 1.0 credits in:	1.0

CHST 2001 [0.5]	Experiential Learning in Childhood and Youth Studies	
CHST 2003 [0.5]	Introduction to Research Methods in Childhood and Youth Studies	
3. 1.5 credits in:		1.5
CHST 3103 [0.5]	Critical Approaches to Child Development	
CHST 3302 [0.5]	Children, Policy, and Practice	
CHST 3303 [0.5]	Children's Rights	
4. 1.0 credit from:		1.0
CHST 3000 [0.5]	Conceptualizing Adolescence in Childhood and Youth Studies	
CHST 3201 [0.5]	Children's Knowledges, Cultures, and Representations	
CHST 3202 [0.5]	Reconceptualizing Early Childhood Education and Care	
CHST 3306 [0.5]	Nature, Childhood and Youth	
5. 1.0 credit from:		1.0
CHST 3002 [0.5]	Special Topics in Child Studies	
CHST 3203 [0.5]	Youth Culture and Activism	
CHST 3304 [0.5]	Disability and Childhood: Transnational Perspectives	
CHST 4003 [0.5]	History of 'The African Child'	
CHST 4004 [0.5]	Theories of Inclusion in Childhood and Youth Education	
HIST 3115 [0.5]	Childhood and Youth in History	
SOCI 3300 [0.5]	Studies in the Sociology of Education	
6. 1.0 credit from:		1.0
CHST 3204 [0.5]	Literary Representations of Childhood and Youth	
CHST 3205 [0.5]	Race, Childhood, and Youth	
CHST 3305 [0.5]	Childhood and Youth in Indigenous Contexts	
CHST 4001 [0.5]	Advanced Topics in Child Studies	
CHST 4102 [0.5]	Queer and Trans Youth	
CHST 4101 [0.5]	Children, Youth, and Popular Culture	
SOCI 3045 [0.5]	Children and Childhood in a Globalized World	
7. 1.5 credits from:		1.5
CHST 3101 [0.5]	Research Seminar	
& CHST 4908 [1.0]	Honours Research Project	
Or		
	1.5 credits CHST courses at the 3000 or 4000 level, which may include:	
CHST 3904 [1.0]	Service-Learning in Community Settings	
B. Credits Not Included in the Major CGPA (12.0 credits)		
8. 8.0 credits in electives not in CHST		8.0
9. 4.0 credits in free electives		4.0
Total Credits		20.0

Notes:

1. Registration in the Honours Research Project requires a Major CGPA of at least 10.0.

Childhood and Youth Studies B.A. (15.0 credits)

Requirements

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credits in:		1.0
CHST 1003 [1.0]	Introduction to Childhood and Youth Studies	
2. 1.0 credit in:		1.0
CHST 2001 [0.5]	Experiential Learning in Childhood and Youth Studies	
CHST 2003 [0.5]	Introduction to Research Methods in Childhood and Youth Studies	
3. 1.5 credits in:		1.5
CHST 3103 [0.5]	Critical Approaches to Child Development	
CHST 3302 [0.5]	Children, Policy, and Practice	
CHST 3303 [0.5]	Children's Rights	
4. 1.0 credit from:		1.0
CHST 3000 [0.5]	Conceptualizing Adolescence in Childhood and Youth Studies	
CHST 3201 [0.5]	Children's Knowledges, Cultures, and Representations	
CHST 3202 [0.5]	Reconceptualizing Early Childhood Education and Care	
CHST 3306 [0.5]	Nature, Childhood and Youth	
5. 1.5 credit from:		1.5
CHST 3002 [0.5]	Special Topics in Child Studies	
CHST 3203 [0.5]	Youth Culture and Activism	
CHST 3204 [0.5]	Literary Representations of Childhood and Youth	
CHST 3205 [0.5]	Race, Childhood, and Youth	
CHST 3304 [0.5]	Disability and Childhood: Transnational Perspectives	
CHST 3305 [0.5]	Childhood and Youth in Indigenous Contexts	
CHST 3904 [1.0]	Service-Learning in Community Settings	
HIST 3115 [0.5]	Childhood and Youth in History	
SOCI 3045 [0.5]	Children and Childhood in a Globalized World	
SOCI 3300 [0.5]	Studies in the Sociology of Education	

B. Credits Not Included in the Major CGPA (9.0 credits)

6. 6.0 credits in electives not in CHST	6.0
7. 3.0 credits in free electives	3.0
Total Credits	15.0

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM

and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial

Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Childhood and Youth Studies (CHST) Courses

CHST 1003 [1.0 credit]

Introduction to Childhood and Youth Studies

An introduction to multiple approaches to studying childhood and youth through a diverse range of historical periods and cultural contexts. Students will apply an interdisciplinary lens to explore the ways that children and youth have been discussed, researched, and understood. Precludes additional credit for CHST 1000 (no longer offered), CHST 1002 (no longer offered). Lecture and discussion groups three hours a week.

CHST 2001 [0.5 credit]

Experiential Learning in Childhood and Youth Studies

An examination of the philosophies, purposes, methods, techniques, and issues of childhood and youth studies through engagement with children and youth in campus and community settings. Students will make connections to theoretical and curriculum frameworks and current debates and perspectives.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in Childhood and Youth Studies.

Lecture and discussion three hours a week.

CHST 2003 [0.5 credit]**Introduction to Research Methods in Childhood and Youth Studies**

An introduction to the foundations of research involving children and youth. Students will learn research paradigms and strategies for designing and conducting research with children and young people. Ethical considerations and the involvement of children as co-researchers will be emphasized.

Precludes additional credit for CHST 2000 (no longer offered).

Prerequisite(s): second-year standing in Childhood and Youth Studies.

Lectures and discussion groups three hours a week.

CHST 2011 [0.5 credit]**Children's Literature**

Introduction to the critical study of children's literature.

Also listed as ENGL 2011.

Precludes additional credit for ENGL 2006 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

CHST 3000 [0.5 credit]**Conceptualizing Adolescence in Childhood and Youth Studies**

A comprehensive interdisciplinary overview of key issues, research, and theoretical developments in the study of childhood and youth. Students will explore the different and often conflicting conceptualizations of adolescence and examine youth theories and their implications.

Prerequisite(s): Third year standing in Childhood and Youth Studies.

Lectures three hours a week.

CHST 3002 [0.5 credit]**Special Topics in Child Studies**

Analysis of selected topics relevant to theory, research, and practice involving children and youth. The choice of topics will vary from year to year. Students should consult with the Institute regarding the topic offered.

Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.

Lectures three hours a week.

CHST 3101 [0.5 credit]**Research Seminar**

This seminar is designed for students who wish to complete an Honours research project in their 4th year. Students will select a topic of study, investigate methodological and ethical considerations, and implement the key steps involved in designing rigorous research projects in diverse settings.

Precludes additional credit for CHST 3100 (no longer offered).

Prerequisite(s): CHST 2003 or CHST 2000 (no longer offered), and third-year standing in Childhood and Youth Studies.

Seminar three hours a week.

CHST 3103 [0.5 credit]**Critical Approaches to Child Development**

A critical examination of philosophical, ideological, and discursive perspectives on childhood and youth. Students will analyze normative constructs reproduced in developmental discourses and research, particularly concerning gender, racism, disability, and oppressive practices.

Precludes additional credit for CHST 3001 (no longer offered).

Prerequisite(s): Third-year standing in Childhood and Youth Studies.

Lecture three hours a week.

CHST 3201 [0.5 credit]**Children's Knowledges, Cultures, and Representations**

An analysis of the ways children construct social relations through cultures and systems of representations. Students will investigate how children's knowledges and identities are constructed through their relationships with the world and develop theoretical and practical approaches for working with children from diverse cultures.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Seminar three hours a week.

CHST 3202 [0.5 credit]**Reconceptualizing Early Childhood Education and Care**

A study of historical, contemporary, global, and local conversations about the professional field of early childhood education and care and its diverse practices and contexts. Topics may include reconciliation, anti-racist pedagogies, asset-based practices, inclusiveness, caring in context, and critical reflection.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Lecture and discussion groups three hours a week.

CHST 3203 [0.5 credit]**Youth Culture and Activism**

An exploration of youth cultures and participation in local, national, and global contexts. Students will examine youth engagement and advocacy, including definitions of citizenship, theories of resistance, the construction of "youth" as a social category, and the impact of technology and social media.

Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 3204 [0.5 credit]**Literary Representations of Childhood and Youth**

An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction).

Also listed as ENGL 3204.

Prerequisite(s): third-year standing, or permission of the department.

Seminar three hours a week.

CHST 3205 [0.5 credit]**Race, Childhood, and Youth**

An examination of historical and contemporary issues, debates, and methodologies pertaining to the studies of race, ethnicities, and racialization in childhood and youth studies. Students will also theorize the intersectionality of race, racism, racialization, racial and ethnic formations, nationalism, and colonialism in a contemporary context.

Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 3302 [0.5 credit]**Children, Policy, and Practice**

An introduction to the concepts of policy and practice and how these are influenced by history, economy, geography, and culture. Topics may include provincial, national, and international economic, social, and educational policies concerning children and youth.

Precludes additional credit for CHST 4000 (no longer offered).

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Lecture three hours a week.

CHST 3303 [0.5 credit]**Children's Rights**

This course examines children's rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts.

Also listed as HUMR 3303.

Precludes additional credit for CHST 3901 (no longer offered).

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Lecture three hours a week.

CHST 3304 [0.5 credit]**Disability and Childhood: Transnational Perspectives**

Drawing on theory and research in disabled children's childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies.

Also listed as DBST 3304.

Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies, or permission of the department.

Lecture three hours a week.

CHST 3305 [0.5 credit]**Childhood and Youth in Indigenous Contexts**

An introduction to indigenous perspectives and contexts, both historical and contemporary, in relation to practice with Indigenous children, youth, families, and communities. Students will explore critical theory and necessary protocols for respectful entry into child and youth care practice within Indigenous contexts.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Childhood and Youth Studies or Indigenous Studies, or permission of the department.

Seminar three hours a week.

CHST 3306 [0.5 credit]**Nature, Childhood and Youth**

In this course, students will learn about the different ways in which human-nature relationships have been conceptualized in the interdisciplinary literature; the evidence base pointing to the power of nature as teacher of foundational life-skills; and current approaches to nature-based learning.

Precludes additional credit for CHST 3002 taken in Fall 2021, Winter or Summer 2022.

Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.

Lectures three hours a week.

CHST 3904 [1.0 credit]**Service-Learning in Community Settings**

Students will learn to apply their knowledge pertaining to children and youth to a policy- or practice-oriented work environment. Students will complete a term paper and other assignments documenting gains in experiential knowledge. Graded SAT/UNS.

Includes: Experiential Learning Activity

Prerequisite(s): students with third- or fourth-year standing in Childhood and Youth Studies may apply to the Undergraduate Advisor for permission.

Field placement six hours per week in a community setting, and regular class forum.

CHST 4001 [0.5 credit]**Advanced Topics in Child Studies**

In-depth analysis of theoretical, empirical, and applied topics related to children and youth in Canada and/or internationally. Topics may include poverty and social inequality, child and youth health, social media and social change. This course is repeatable when the topic changes.

Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 4003 [0.5 credit]**History of 'The African Child'**

Students will analyze the history of the figure of 'the African child' using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.

Includes: Experiential Learning Activity

Also listed as AFRI 4003.

Precludes additional credit for CHST 4001 if taken in 2014-15.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

CHST 4004 [0.5 credit]**Theories of Inclusion in Childhood and Youth Education**

An examination of the ways that educational discourses construct and perpetuate marginalization of disadvantaged individuals across historical, political, and educational contexts. Students will explore inclusive and exclusive approaches to education and care and how these discursive and material conditions shape the learning experiences of children.

Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 4101 [0.5 credit]**Children, Youth, and Popular Culture**

A critical examination how popular culture, including consumer culture and digital media, mediates the identities, aspirations, and experiences of children and youth. Students will engage in critical dialogue about media culture and ideology and use cultural production to explore counter-narratives to problematic media representations.

Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 4102 [0.5 credit]**Queer and Trans Youth**

An examination of the ways that queer and trans youth have been conceptualized in research, media, literature, policy, and education. A range of multimedia sources will be used to explore the ways queer and trans youth are using language to render themselves intelligible.

Prerequisite(s): fourth-year standing in Childhood and Youth Studies or Women's and Gender Studies, or permission of the department.

Seminar three hours a week.

CHST 4900 [0.5 credit]**Independent Study**

A reading or research course for students who wish to investigate a particular topic of interest within Childhood and Youth Studies. Students may not take more than one credit of Independent Study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Childhood and Youth Studies and IIS Co-Director approval.

CHST 4908 [1.0 credit]**Honours Research Project**

Interdisciplinary research project for students in the Honours Research Project stream. Projects will be completed under the supervision of a CHST faculty member. Students must contact the CHST Program Advisor to request approval to register in this course.

Includes: Experiential Learning Activity

Prerequisite(s): CHST 3101, fourth-year standing in Childhood and Youth Studies with a Major CGPA of 10.0 or higher, and permission of the CHST Program Advisor.

Cognitive Science

This section presents the requirements for programs in:

- Cognitive Science with Concentration in Philosophical and Conceptual Issues Bachelor of Cognitive Science Honours
- Cognitive Science with Concentration in Language and Linguistics Bachelor of Cognitive Science Honours
- Cognitive Science with Concentration in the Biological Foundations of Cognition Bachelor of Cognitive Science Honours
- Cognitive Science with Concentration in Cognition and Psychology Bachelor of Cognitive Science Honours
- Cognitive Science with Concentration in Cognition and Computation Bachelor of Cognitive Science Honours
- Cognitive Science Bachelor of Cognitive Science
- Post-Baccalaureate Diploma in Cognitive Science

Program Requirements**Cognitive Science with Concentration in Philosophical and Conceptual Issues****Bachelor of Cognitive Science Honours (20.0 credits)****A. Credits Included in the Major CGPA (15.5 credits)**

1. 1.0 credit from:	1.0
CGSC 1001 [0.5] Mysteries of the Mind	

FYSM 1607 [1.0]	Cognitive Science: Thinking and Knowing	
PHIL 1301 [0.5]	Mind, World, and Knowledge	
2. 1.0 credit in:		1.0
CGSC 2001 [0.5]	Theories in Cognitive Science	
CGSC 2002 [0.5]	Methods in Cognitive Science	
3. 1.0 credit in:		1.0
CGSC at the 3000-level or above		
4. 0.5 credit from:		0.5
CGSC 1005 [0.5]	Computational Methods in Cognitive Science	
COMP 1005 [0.5]	Introduction to Computer Science I	
5. 0.5 credit in:		0.5
CGSC 3601 [0.5]	Artificial Intelligence and Cognitive Science	
6. 0.5 credit in:		0.5
LING 1001 [0.5]	Introduction to Linguistics I	
7. 1.0 credit in:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
8. 1.0 credit in:		1.0
PHIL 2001 [0.5]	Introduction to Logic	
PHIL 2501 [0.5]	Introduction to Philosophy of Mind	
9. 0.5 credit from:		0.5
CGSC 3004 [0.5]	Philosophy and Cognitive Science	
PHIL 2301 [0.5]	Introduction to the Philosophy of Science	
PHIL 2504 [0.5]	Language and Communication	
PHIL 3104 [0.5]	The Roots of Analytic Philosophy	
PHIL 3301 [0.5]	Issues in the Philosophy of Science	
PHIL 3306 [0.5]	Symbolic Logic	
PHIL 3501 [0.5]	Philosophy of Cognitive Science	
PHIL 3502 [0.5]	Mind and Action	
PHIL 3504 [0.5]	Pragmatics	
PHIL 3506 [0.5]	Semantics	
PHIL 3530 [0.5]	Philosophy of Language	
10. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	
11. 0.5 credit from:		0.5
NEUR 1202 [0.5]	Neuroscience of Mental Health and Psychiatric Disease	
PSYC 2307 [0.5]	Human Neuropsychology I	
12. 1.5 credits from:		1.5
a. Thesis pathway		
CGSC 3908 [0.5]	Honours Seminar in Cognitive Science	
CGSC 4908 [1.0]	Honours Thesis	
OR		
b. Project pathway		
CGSC 4909 [1.0]	Honours Project and 0.5 credit in CGSC at the 3000-level or above	
OR		
c. Coursework pathway		

1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above	
13. 4.5 credits in the concentration:	4.5
a. 4.0 credits from:	
CGSC 3004 [0.5]	Philosophy and Cognitive Science
PHIL 2301 [0.5]	Introduction to the Philosophy of Science
PHIL 2504 [0.5]	Language and Communication
PHIL 2540 [0.5]	Personal Identity and the Self
PHIL 3104 [0.5]	The Roots of Analytic Philosophy
PHIL 3140 [0.5]	Epistemology
PHIL 3301 [0.5]	Issues in the Philosophy of Science
PHIL 3306 [0.5]	Symbolic Logic
PHIL 3501 [0.5]	Philosophy of Cognitive Science
PHIL 3502 [0.5]	Mind and Action
PHIL 3504 [0.5]	Pragmatics
PHIL 3506 [0.5]	Semantics
PHIL 3530 [0.5]	Philosophy of Language
b. 0.5 credit from:	
PHIL 4055 [0.5]	Lexical Semantics
PHIL 4210 [0.5]	Seminar in Philosophy of Language or Linguistics
PHIL 4220 [0.5]	Seminar in philosophy of Mind or Cognition
PHIL 4230 [0.5]	Seminar in Metaphysics, Epistemology, or Philosophy of Science
PHIL 4503 [0.5]	Special Topic in Philosophy of Computing
PHIL 4505 [0.5]	Formal Semantics

B. Credits not included in the Major (4.5 credits)

14. 4.5 credits in free electives.	4.5
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Total Credits	20.0
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Note: normally, students may not offer more than one credit of independent study (eg. CGSC 4801 Independent Study and CGSC 4802 Independent Study) in their total program, including independent study credits taken through other departments.

Cognitive Science with Concentration in Language and Linguistics Bachelor of Cognitive Science Honours (20.0 credits)

A. Credits Included in the Major CGPA (15.5 credits)

1. 1.0 credit from:		1.0
CGSC 1001 [0.5]	Mysteries of the Mind	
FYSM 1607 [1.0]	Cognitive Science: Thinking and Knowing	
PHIL 1301 [0.5]	Mind, World, and Knowledge	
2. 1.0 credit in:		1.0
CGSC 2001 [0.5]	Theories in Cognitive Science	
CGSC 2002 [0.5]	Methods in Cognitive Science	
3. 1.0 credit in:		1.0
CGSC at the 3000-level or above		
4. 0.5 credit from:		0.5
CGSC 1005 [0.5]	Computational Methods in Cognitive Science	
COMP 1005 [0.5]	Introduction to Computer Science I	

5. 0.5 credit in:	0.5
CGSC 3601 [0.5] Artificial Intelligence and Cognitive Science	
6. 0.5 credit in:	0.5
LING 1001 [0.5] Introduction to Linguistics I	
7. 1.0 credit in:	1.0
LING 2005 [0.5] Linguistic Analysis	
LING 2007 [0.5] Phonetics	
8. 1.0 credit in:	1.0
PHIL 2001 [0.5] Introduction to Logic	
PHIL 2501 [0.5] Introduction to Philosophy of Mind	
9. 0.5 credit from:	0.5
CGSC 3004 [0.5] Philosophy and Cognitive Science	
PHIL 2301 [0.5] Introduction to the Philosophy of Science	
PHIL 2504 [0.5] Language and Communication	
PHIL 3104 [0.5] The Roots of Analytic Philosophy	
PHIL 3301 [0.5] Issues in the Philosophy of Science	
PHIL 3306 [0.5] Symbolic Logic	
PHIL 3501 [0.5] Philosophy of Cognitive Science	
PHIL 3502 [0.5] Mind and Action	
PHIL 3504 [0.5] Pragmatics	
PHIL 3506 [0.5] Semantics	
PHIL 3530 [0.5] Philosophy of Language	
10. 2.0 credits in:	2.0
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	
PSYC 2001 [0.5] Introduction to Research Methods in Psychology	
PSYC 2700 [0.5] Introduction to Cognitive Psychology	
11. 0.5 credit from:	0.5
NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease	
PSYC 2307 [0.5] Human Neuropsychology I	
12. 1.5 credits from:	1.5
a. Thesis pathway	
CGSC 3908 [0.5] Honours Seminar in Cognitive Science	
CGSC 4908 [1.0] Honours Thesis	
OR	
b. Project pathway	
CGSC 4909 [1.0] Honours Project	
and 0.5 credit in CGSC at the 3000-level or above	
OR	
c. Coursework pathway	
1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above	
13. 4.5 credits in the concentration:	4.5
a. 2.5 credits in:	
LING 3004 [0.5] Syntax I	
LING 3005 [0.5] Morphology I	
LING 3007 [0.5] Phonology I	
LING 3505 [0.5] Semantics	
LING 3601 [0.5] Language Processing and the Brain	
b. 1.0 credit from:	

LING 2604 [0.5] Communication Differences and Disabilities I	
LING 3604 [0.5] Communication Differences and Disabilities II	
LING 3504 [0.5] Pragmatics	
LING 3603 [0.5] Child Language	
c. 1.0 credit from:	
LING 4004 [0.5] Syntax II	
LING 4005 [0.5] Morphology II	
LING 4007 [0.5] Phonology II	
LING 4505 [0.5] Formal Semantics	
LING 4510 [0.5] Lexical Semantics	
LING 4601 [0.5] Cognitive Neuroscience of Language	
LING 4603 [0.5] First Language Acquisition	
LING 4605 [0.5] Psycholinguistic Research Methods	
LING 4606 [0.5] Statistics for Language Research	
B. Credits not included in the Major (4.5 credits)	
14. 4.5 credits in free electives	4.5
Total Credits	20.0

Note: Normally, students may not offer more than one credit of independent study (eg. CGSC 4801 [0.5] Independent Study and CGSC 4802 [0.5] Independent Study) in their total program, including independent study credits taken through other departments.

Cognitive Science with Concentration in the Biological Foundations of Cognition Bachelor of Cognitive Science Honours (20.0 credits)

A. Credits Included in the Major GPA (15.5 credits)	
1. 1.0 credit from:	1.0
CGSC 1001 [0.5] Mysteries of the Mind	
FYSM 1607 [1.0] Cognitive Science: Thinking and Knowing	
PHIL 1301 [0.5] Mind, World, and Knowledge	
2. 1.0 credit in:	1.0
CGSC 2001 [0.5] Theories in Cognitive Science	
CGSC 2002 [0.5] Methods in Cognitive Science	
3. 1.0 credit in:	1.0
CGSC at the 3000-level or above	
4. 0.5 credit from:	0.5
CGSC 1005 [0.5] Computational Methods in Cognitive Science	
COMP 1005 [0.5] Introduction to Computer Science I	
5. 0.5 credit in:	0.5
CGSC 3601 [0.5] Artificial Intelligence and Cognitive Science	
6. 0.5 credit in:	0.5
LING 1001 [0.5] Introduction to Linguistics I	
7. 1.0 credit in:	1.0
LING 2005 [0.5] Linguistic Analysis	
LING 2007 [0.5] Phonetics	
8. 1.0 credit in:	1.0
PHIL 2001 [0.5] Introduction to Logic	
PHIL 2501 [0.5] Introduction to Philosophy of Mind	
9. 0.5 credit from:	0.5
CGSC 3004 [0.5] Philosophy and Cognitive Science	

PHIL 2301 [0.5]	Introduction to the Philosophy of Science	
PHIL 2504 [0.5]	Language and Communication	
PHIL 3104 [0.5]	The Roots of Analytic Philosophy	
PHIL 3301 [0.5]	Issues in the Philosophy of Science	
PHIL 3306 [0.5]	Symbolic Logic	
PHIL 3501 [0.5]	Philosophy of Cognitive Science	
PHIL 3502 [0.5]	Mind and Action	
PHIL 3504 [0.5]	Pragmatics	
PHIL 3506 [0.5]	Semantics	
PHIL 3530 [0.5]	Philosophy of Language	
10. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	
11. 0.5 credit in:		0.5
NEUR 1202 [0.5]	Neuroscience of Mental Health and Psychiatric Disease	
12. 1.5 credits from:		1.5
a. Thesis pathway		
CGSC 3908 [0.5]	Honours Seminar in Cognitive Science	
CGSC 4908 [1.0]	Honours Thesis	
OR		
b. Project Pathway		
CGSC 4909 [1.0]	Honours Project	
and 0.5 credit in CGSC at the 3000-level or above		
OR		
c. Coursework pathway		
1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above		
13. 4.5 credits in the concentration:		4.5
a. 0.5 credit in:		
NEUR 1203 [0.5]	Neuroscience of Mental Health and Neurological Disease	
b. 2.5 credits in:		
NEUR 2002 [0.5]	Introduction to Statistics in Neuroscience	
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience	
NEUR 2202 [0.5]	Neurodevelopment and Plasticity	
NEUR 3001 [0.5]	Data Analysis in Neuroscience I	
NEUR 3002 [0.5]	Data Analysis in Neuroscience II	
c. 1.0 credit from:		
NEUR 2801 [0.5]	Neuroscience and Creativity	
NEUR 3204 [0.5]	Neuropharmacology	
NEUR 3206 [0.5]	Sensory and Motor Neuroscience	
NEUR 3207 [0.5]	Systems Neuroscience	
NEUR 3303 [0.5]	The Neuroscience of Consciousness	
PSYC 3307 [0.5]	Human Neuropsychology II	
PSYC 3709 [0.5]	Language Processing and the Brain	
d. 0.5 credit in NEUR at the 3000-level or above		
B. Credits Not Included in the Major CGPA (4.5 credits)		

14. 4.5 credits in free electives. 4.5

Total Credits 20.0

Note: normally, students may not offer more than one credit of independent study (eg. CGSC 4801 Independent Study and CGSC 4802 Independent Study) in their total program, including independent study credits taken through other departments.

Cognitive Science with Concentration in Cognition and Psychology Bachelor of Cognitive Science Honours (20.0 credits)

A. Credits Included in the Major CGPA (15.5 credits)

1. 1.0 credit from:		1.0
CGSC 1001 [0.5]	Mysteries of the Mind	
FYSM 1607 [1.0]	Cognitive Science: Thinking and Knowing	
PHIL 1301 [0.5]	Mind, World, and Knowledge	
2. 1.0 credit in:		1.0
CGSC 2001 [0.5]	Theories in Cognitive Science	
CGSC 2002 [0.5]	Methods in Cognitive Science	
3. 1.0 credit in:		1.0
CGSC at the 3000-level or above		
4. 0.5 credit from:		0.5
CGSC 1005 [0.5]	Computational Methods in Cognitive Science	
COMP 1005 [0.5]	Introduction to Computer Science I	
5. 0.5 credit in:		0.5
CGSC 3601 [0.5]	Artificial Intelligence and Cognitive Science	
6. 0.5 credit in:		0.5
LING 1001 [0.5]	Introduction to Linguistics I	
7. 1.0 credit in:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
8. 1.0 credit in:		1.0
PHIL 2001 [0.5]	Introduction to Logic	
PHIL 2501 [0.5]	Introduction to Philosophy of Mind	
9. 0.5 credit from:		0.5
CGSC 3004 [0.5]	Philosophy and Cognitive Science	
PHIL 2301 [0.5]	Introduction to the Philosophy of Science	
PHIL 2504 [0.5]	Language and Communication	
PHIL 3104 [0.5]	The Roots of Analytic Philosophy	
PHIL 3301 [0.5]	Issues in the Philosophy of Science	
PHIL 3306 [0.5]	Symbolic Logic	
PHIL 3501 [0.5]	Philosophy of Cognitive Science	
PHIL 3502 [0.5]	Mind and Action	
PHIL 3504 [0.5]	Pragmatics	
PHIL 3506 [0.5]	Semantics	
PHIL 3530 [0.5]	Philosophy of Language	
10. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	

11. 0.5 credit from:	0.5
NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease	
PSYC 2307 [0.5] Human Neuropsychology I	

12. 1.5 credits from: 1.5

a. Thesis pathway

CGSC 3908 [0.5] Honours Seminar in Cognitive Science

CGSC 4908 [1.0] Honours Thesis

OR

b. Project pathway

CGSC 4909 [1.0] Honours Project

and 0.5 credit in CGSC at the 3000-level or above

OR

c. Coursework pathway

1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or above

13. 4.5 credits in the concentration: 4.5

a. 1.5 credits in:

PSYC 2002 [0.5] Introduction to Statistics in Psychology

PSYC 3000 [1.0] Design and Analysis in Psychological Research

b. 0.5 credit in PSYC at the 2000-level or above

c. 2.0 credits from:

PSYC 3700 [1.0] Cognition (Honours Seminar)

PSYC 3307 [0.5] Human Neuropsychology II

PSYC 3506 [0.5] Cognitive Development

PSYC 3508 [0.5] Child Language

PSYC 3702 [0.5] Perception

PSYC 3709 [0.5] Language Processing and the Brain

NEUR 3303 [0.5] The Neuroscience of Consciousness

d. 0.5 credit in PSYC at the 4000-level or above

B. Credits Not Included in the Major CGPA (4.5 credits)

14. 4.5 credits in free electives. 4.5

Total Credits 20.0

Note: Normally, students may not offer more than one credit of independent study (eg. CGSC 4801 [0.5] Independent Study and CGSC 4802 [0.5] Independent Study) in their total program, including independent study credits taken through other departments.

**Cognitive Science with Concentration in Cognition and Computation
Bachelor of Cognitive Science Honours (20.0 credits)**

A. Credits Included in the Major CGPA (15.5 credits)

1. 1.0 credit from: 1.0

CGSC 1001 [0.5] Mysteries of the Mind

FYSM 1607 [1.0] Cognitive Science: Thinking and Knowing

PHIL 1301 [0.5] Mind, World, and Knowledge

2. 1.0 credit in: 1.0

CGSC 2001 [0.5] Theories in Cognitive Science

CGSC 2002 [0.5] Methods in Cognitive Science

3. 1.0 credit in: 1.0

CGSC at the 3000-level or above

4. 0.5 credit in: 0.5

COMP 1005 [0.5] Introduction to Computer Science I

5. 0.5 credit in: 0.5

CGSC 3601 [0.5] Artificial Intelligence and Cognitive Science

6. 0.5 credit in: 0.5

LING 1001 [0.5] Introduction to Linguistics I

7. 1.0 credit in: 1.0

LING 2005 [0.5] Linguistic Analysis

LING 2007 [0.5] Phonetics

8. 1.0 credit in: 1.0

PHIL 2001 [0.5] Introduction to Logic

PHIL 2501 [0.5] Introduction to Philosophy of Mind

9. 0.5 credit from: 0.5

PHIL 2301 [0.5] Introduction to the Philosophy of Science

PHIL 2504 [0.5] Language and Communication

PHIL 3104 [0.5] The Roots of Analytic Philosophy

PHIL 3301 [0.5] Issues in the Philosophy of Science

PHIL 3306 [0.5] Symbolic Logic

PHIL 3501 [0.5] Philosophy of Cognitive Science

PHIL 3502 [0.5] Mind and Action

PHIL 3504 [0.5] Pragmatics

PHIL 3506 [0.5] Semantics

PHIL 3530 [0.5] Philosophy of Language

CGSC 3004 [0.5] Philosophy and Cognitive Science

10. 2.0 credits in: 2.0

PSYC 1001 [0.5] Introduction to Psychology I

PSYC 1002 [0.5] Introduction to Psychology II

PSYC 2001 [0.5] Introduction to Research Methods in Psychology

PSYC 2700 [0.5] Introduction to Cognitive Psychology

11. 0.5 credit from: 0.5

PSYC 2307 [0.5] Human Neuropsychology I

NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease

12. 1.5 credits from: 1.5

a. Thesis pathway

CGSC 3908 [0.5] Honours Seminar in Cognitive Science

CGSC 4908 [1.0] Honours Thesis

OR

b. Project pathway

CGSC 4909 [1.0] Honours Project

and 0.5 credit in CGSC at the 3000-level or higher

OR

c. Coursework pathway

1.5 credits in CGSC, COMP, LING, NEUR, PHIL, or PSYC at the 3000-level or higher

13. 4.5 credits in the concentration: 4.5

a. 0.5 credit in:

COMP 1006 [0.5] Introduction to Computer Science II

b. 0.5 credit in COMP at the 1000-level or higher

c. 2.0 credits from:

COMP 2401 [0.5] Introduction to Systems Programming

COMP 2402 [0.5]	Abstract Data Types and Algorithms	
COMP 2404 [0.5]	Introduction to Software Engineering	
COMP 2406 [0.5]	Fundamentals of Web Applications	
COMP 2804 [0.5]	Discrete Structures II	
COMP 3008 [0.5]	Human-Computer Interaction	
d. 1.0 credit in COMP at the 2000-level or higher		
e. 0.5 credit in COMP at the 3000-level or higher		
B. Credits not included in the Major CGPA (4.5 credits)		
14. 4.5 credits in free electives		4.5
Total Credits		20.0

Note: Normally, students may not offer more than one credit of independent study (eg. CGSC 4801 Independent Study and CGSC 4802 Independent Study) in their total program, including independent study credits taken through other departments.

Cognitive Science Bachelor of Cognitive Science (15.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)		
1. 1.0 credit from:		1.0
CGSC 1001 [0.5]	Mysteries of the Mind	
FYSM 1607 [1.0]	Cognitive Science: Thinking and Knowing	
PHIL 1301 [0.5]	Mind, World, and Knowledge	
2. 1.0 credit in:		1.0
CGSC 2001 [0.5]	Theories in Cognitive Science	
CGSC 2002 [0.5]	Methods in Cognitive Science	
3. 1.0 credit in CGSC at the 3000-level or above		1.0
4. 0.5 credit from:		0.5
CGSC 1005 [0.5]	Computational Methods in Cognitive Science	
COMP 1005 [0.5]	Introduction to Computer Science I	
5. 1.5 credits in:		1.5
LING 1001 [0.5]	Introduction to Linguistics I	
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
6. 1.0 credit in:		1.0
PHIL 2001 [0.5]	Introduction to Logic	
PHIL 2501 [0.5]	Introduction to Philosophy of Mind	
7. 0.5 credit from:		0.5
CGSC 3004 [0.5]	Philosophy and Cognitive Science	
PHIL 2301 [0.5]	Introduction to the Philosophy of Science	
PHIL 2504 [0.5]	Language and Communication	
PHIL 3104 [0.5]	The Roots of Analytic Philosophy	
PHIL 3301 [0.5]	Issues in the Philosophy of Science	
PHIL 3306 [0.5]	Symbolic Logic	
PHIL 3501 [0.5]	Philosophy of Cognitive Science	
PHIL 3502 [0.5]	Mind and Action	
PHIL 3504 [0.5]	Pragmatics	
PHIL 3506 [0.5]	Semantics	
PHIL 3530 [0.5]	Philosophy of Language	
8. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	
9. 0.5 credit from:		0.5
NEUR 1202 [0.5]	Neuroscience of Mental Health and Psychiatric Disease	
PSYC 2307 [0.5]	Human Neuropsychology I	
B. Credits Not Included in the Major CGPA (6.0 credits)		
10. 6.0 credits in free electives		6.0
Total Credits		15.0

Post-Baccalaureate Diploma in Cognitive Science (4.0 credits)

Admission to this program requires the permission of the Department of Cognitive Science. Normally, students are required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Requirements:		
1. 0.5 credit from:		0.5
CGSC 2001 [0.5]	Theories in Cognitive Science	
CGSC 2002 [0.5]	Methods in Cognitive Science	
2. 1.0 credit in:		1.0
CGSC 3601 [0.5]	Artificial Intelligence and Cognitive Science	
CGSC 3908 [0.5]	Honours Seminar in Cognitive Science	
3. 1.5 credits in CGSC at the 3000-level or above		1.5
4. 1.0 credits from:		1.0
CGSC 4908 [1.0]	Honours Thesis	
CGSC 4909 [1.0]	Honours Project	
Total Credits		4.0

Regulations

In addition to the program requirements listed in this section, students must satisfy the academic regulations of the university, and the faculty regulations for the Bachelor of Cognitive Science.

Academic Regulations and Requirements for the Bachelor of Cognitive Science Degree

The regulations presented below apply to all Bachelor of Cognitive Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.Cog.Sc. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM (one 1.0-credit FYSM or two 0.5-credit FYSMs) and can only register in a FYSM while they have first-year standing in their B.Cog.Sc. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as

a Second Language (ESLA) credit are not permitted to register in a FYSM.

Change of Program Within the B.Cog.Sc. Degree

Students may transfer to a program within the B.Cog.Sc. degree. Applicants must normally be *Eligible to Continue* (EC) in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*. Other applications for change of program will be considered on their merits; students may be admitted to the new program if they are *Eligible to Continue* (EC) or on *Academic Warning* (AW).

Applications to declare or change programs within the B.Cog.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program or into a program element or option is subject to any enrolment limitations, specific program, program element or option requirements, as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may apply to the Registrar's Office to be admitted to a minor, concentration or specialization during their first or subsequent years of study. Acceptance into a minor, concentration or specialization is subject to any specific requirements of the intended Minor, Concentration or Specialization as published in the relevant Calendar entry. Acceptance into a Concentration, or Specialization requires the student to be meeting the minimum CGPAs defined in Section 3.1.9 Changes of Program and Degree, in the *Academic Regulations of the University*.

Mention : français

Students registered in the B.Cog.Sc. may earn the notation *Mention : français* by completing part of their requirements in French and by demonstrating a knowledge of the history and culture of French Canada. The general requirements are listed below.

Students in the B.Cog.Sc. Honours program must present:

1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level and 1.0 credit at the 4000-level taken in French. These credits may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Students in the B.Cog.Sc. program must present:

1. 1.0 credit in the French language;
2. 1.0 credit devoted to the history and culture of French Canada
3. 1.0 credit at the 2000- or 3000-level taken in French. This credit may come from any of Philosophy, Psychology, Computer Science, Linguistics, Neuroscience, or Cognitive Science, without restriction.

Courses taught in French (Item 3, above) may be taken at Carleton, at the University of Ottawa on the Exchange

Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on Exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process

operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Cognitive Science Honours: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Cognitive Science program;

2. Obtained and maintained an overall CGPA of 8.50 or higher;
3. Successfully completed CGSC 2001.

Bachelor of Cognitive Science Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: CGSC 3999 [0.0]

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 4	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	
Summer		Summer		Summer	W	Summer	W	Summer	

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Cognitive Science (B.Cog.Sci.) (Honours)
- Bachelor of Cognitive Science (B.Cog.Sci)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

The cut-off average for admission will be set annually and will normally be above the minimum requirement.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*. Advanced standing will be granted only for those subjects that are assessed as being appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Cognitive Science Honours;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and**

Procedures section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma

- **Post-Baccalaureate Diploma in Cognitive Science**

Admission to this program requires the permission of the Department of Cognitive Science. Normally, students are required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Cognitive Science (CGSC) Courses

CGSC 1001 [0.5 credit]

Mysteries of the Mind

Challenges faced in understanding the mind, and some of the approaches cognitive science has brought to bear on them. Topics may include the nature of knowledge, how we learn, the extent to which human thinking is rational, biases in thinking, and evolutionary influences on cognition.

Lectures three hours per week.

CGSC 1005 [0.5 credit]

Computational Methods in Cognitive Science

Introduction to computational methods, with an emphasis on programming. Topics and assignments will focus on applications in cognitive science. No prior computing experience required.

Includes: Experiential Learning Activity

Lecture three hours and tutorial one and a half hours a week.

CGSC 2001 [0.5 credit]

Theories in Cognitive Science

An integrated background of the discipline of Cognitive Science, with an historical overview (1940's onward) and examination of the extent to which the discipline has assimilated the collective knowledge of contributing disciplines (e.g., psychology, philosophy, linguistics, artificial intelligence and neuroscience).

Prerequisite(s): second-year standing and FYSM 1607 or CGSC 1001, or permission of the Department.

Lectures three hours a week.

CGSC 2002 [0.5 credit]**Methods in Cognitive Science**

Selected topics in cognitive science covered from the perspectives of psychology, computer science, linguistics, philosophy, and other related disciplines. Students may be required to complete independent research projects.

Includes: Experiential Learning Activity

Prerequisite(s): CGSC 1001 or FYSM 1607, second year standing, or permission of the Department. Restricted to students enrolled in B.Cog.Sc. programs.
Seminars and tutorials six hours per week.

CGSC 3004 [0.5 credit]**Philosophy and Cognitive Science**

An examination of the significance and role of philosophy in cognitive science. Topics may include: philosophical methods for studying the mind, prospects for naturalizing consciousness and intentionality, assessing competing models of the mind.

Prerequisite(s): CGSC 2001 and PHIL 2501, and third-year standing.

Seminar three hours per week.

CGSC 3201 [0.5 credit]**Cognitive Processes**

An examination of research findings on cognitive processes. Topics may include attention, speech perception, memory, intelligence, reasoning, learning, working memory, reading, and mathematics.

Prerequisite(s): third-year standing, and CGSC 2001 or PSYC 2700.

Seminar three hours per week.

CGSC 3301 [0.5 credit]**Language and Cognitive Science**

Issues related to language and cognitive science are examined through a detailed consideration of selected topics.

Prerequisite(s): third-year standing, and CGSC 2001.

Seminar three hours per week.

CGSC 3501 [0.5 credit]**Cognitive Neuroscience**

Issues related to the role of cognitive neuroscience research in cognitive science are examined through a detailed consideration of selected topics.

Prerequisite(s): third-year standing and CGSC 2001.

Seminar, three hours per week.

CGSC 3601 [0.5 credit]**Artificial Intelligence and Cognitive Science**

An introduction to the contribution of artificial intelligence and computer modeling of cognitive processes to cognitive science.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 4001.

Prerequisite(s): third-year standing and CGSC 2002 and (CGSC 1005 or COMP 1005). Restricted to students enrolled in B.Cog.Sc. Honours.

Seminars and labs six hours per week.

CGSC 3704 [0.5 credit]**Cognitive Science and the Digital Humanities**

Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.

Also listed as DIGH 3704.

Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.

Seminar three hours per week.

CGSC 3908 [0.5 credit]**Honours Seminar in Cognitive Science**

Major theories and empirical approaches within Cognitive Science are examined through a detailed consideration of selected topics. Students are required to complete independent research projects to prepare for their fourth-year honours theses.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 3001 (no longer offered) and CGSC 3002 (no longer offered).

Prerequisite(s): third year standing, CGSC 2001 and CGSC 2002, and enrolment in B. Cog. Sc. Honours with a CGPA in the major requirements of 8.0.

Seminars and tutorials six hours per week.

CGSC 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

CGSC 4601 [0.5 credit]**Cognitive Modelling in Cognitive Science**

Introduction to the field of cognitive modelling. Different modelling systems and how to evaluate them against human data; how to create cognitive models using the ACT-R cognitive architecture.

Prerequisite(s): third year standing, CGSC 2001, and (CGSC 1005 or COMP 1005).

Also offered at the graduate level, with different requirements, as CGSC 5601, for which additional credit is precluded.

Seminar three hours per week, tutorial one and a half hours per week.

CGSC 4801 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest.

Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 4802 [0.5 credit]

Independent Study

A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 4900 [0.5 credit]

Special Topics in Cognitive Science

The topic of this course will vary from year to year. Students may register in more than one section of CGSC 4900 but may register in each section only once. Prerequisite(s): each section will have its own prerequisites and permission of the department if is required.

Seminar three hours per week.

CGSC 4908 [1.0 credit]

Honours Thesis

Interdisciplinary thesis. In developing a thesis, students must consult the Undergraduate Supervisor. Only the Undergraduate Supervisor can assign a supervisor or grant approval to register in this course. Faculty regulations governing Honours Research Essays and Honours Theses apply.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 4909.

Prerequisite(s): fourth year standing, CGSC 3908, and enrolment in B.Cog.Sc. Honours with a major CGPA of 8.0.

CGSC 4909 [1.0 credit]

Honours Project

Interdisciplinary project. Students engage in one or more group research projects.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 4908.

Prerequisite(s): 4th year standing, enrolment in B. Cog. Sc. Honours.

Seminar

Communication and Media Studies

This section presents the requirements for programs in:

- Communication and Media Studies B.Co.M.S. Honours
- Communication and Media Studies B.Co.M.S. Combined Honours
- Communication and Media Studies B.Co.M.S.
- Specialization in Global Media and Communication B.G.In.S. Honours
- Stream in Global Media and Communication B.G.In.S.
- Minor in Communication and Media Studies
- Journalism and Communication and Media Studies B.J. Combined Honours

- Communication and Media Studies B.A. Combined Honours

Program Requirements

Communication and Media Studies

B.Co.M.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits):

1. 1.0 credit from:		1.0
COMS 1001 [0.5]	Foundations in Communication and Media Studies	
COMS 1002 [0.5]	Current Issues in Communication and Media	
JOUR 1001 [0.5]	Foundations: Journalism in Context	
JOUR 1002 [0.5]	Foundations: Practicing Journalism in a Diverse Society	
2. 1.0 credit in:		1.0
COMS 2003 [0.5]	Theoretical Foundations in Communication and Media Studies	
COMS 2004 [0.5]	Introduction to Communication Research	
3. 1.5 credits in:		1.5
COMS 3001 [0.5]	Quantitative Research in Communication	
COMS 3002 [0.5]	Qualitative Research in Communication	
COMS 3500 [0.5]	Current Issues in Communication and Media Theory	
4. 2.5 credits from	the following, including at least 1.0 credit at the 3000-level:	2.5
FYSM 1217 [0.5]	Selected Topics in Communication and Media Studies	
COMS 2200 [0.5]	Big Data and Society	
COMS 2300 [0.5]	Communication as Propaganda	
COMS 2400 [0.5]	Climate Change and Communication	
COMS 2500 [0.5]	Communication and Science	
COMS 2501 [0.5]	Media Law	
COMS 2504 [0.5]	Language and Communication	
COMS 2600 [0.5]	Communication and Culture	
COMS 2700 [0.5]	Global Media and Communication	
COMS 3100 [0.5]	Introduction to Political Management	
COMS 3108 [0.5]	Media Industries and the Network Society	
COMS 3109 [0.5]	Communication, Culture and Identity	
COMS 3110 [0.5]	Comic Books and Graphic Novels	
COMS 3111 [0.5]	Racism and Digital Media	
COMS 3302 [0.5]	Political Communication	
COMS 3308 [0.5]	Critical Studies in Advertising and Consumer Culture	
COMS 3310 [0.5]	Critical Perspectives of Public Relations	
COMS 3311 [0.5]	Media and Communication in Regional Contexts	
COMS 3400 [0.5]	Ethical Controversies in Media and Communication	
COMS 3401 [0.5]	Communications Regulation in Canada	

COMS 3403 [0.5]	Communication, Technology and Culture	
COMS 3404 [0.5]	Music Industries	
COMS 3406 [0.5]	Media Audiences and Users	
COMS 3407 [0.5]	Comparative Media Studies	
COMS 3410 [0.5]	Visual Media and Communication	
COMS 3411 [0.5]	Media and Social Activism	
COMS 3412 [0.5]	Communication and Health	
COMS 3800 [0.5]	Special Topic in Communication and Media Studies	
5. 2.5 credits from:		2.5
COMS 4001 [0.5]	Sport and/as Media	
COMS 4002 [0.5]	Media Fandom	
COMS 4004 [0.5]	Communication and Discourse	
COMS 4305 [0.5]	Media and Religion	
COMS 4306 [0.5]	Media and Conflict	
COMS 4311 [0.5]	Environmental Communication	
COMS 4312 [0.5]	Crisis and Risk Communication	
COMS 4313 [0.5]	Screen Studies	
COMS 4315 [0.5]	Communication and the Built Environment	
COMS 4316 [0.5]	Indigenous Media in Global Contexts	
COMS 4317 [0.5]	Digital Media and Global Network Society	
COMS 4337 [0.5]	Communication and Public Affairs Strategies	
COMS 4401 [0.5]	Global Internet Policy and Governance	
COMS 4403 [0.5]	Digital Media Industries	
COMS 4405 [0.5]	The Networked Self	
COMS 4406 [0.5]	Open Government and Communication	
COMS 4407 [0.5]	Communication and Critical Data Studies	
COMS 4408 [0.5]	Creative Work	
COMS 4410 [0.5]	Mobile Media	
COMS 4411 [0.5]	Algorithmic Culture	
COMS 4412 [0.5]	Game Studies	
COMS 4507 [0.5]	Professional Communication Research	
COMS 4602 [0.5]	Children, Youth and Media	
COMS 4603 [0.5]	Diaspora and Communication	
COMS 4604 [0.5]	Media, Gender and Sexuality	
COMS 4605 [0.5]	Media, Race and Ethnicity	
COMS 4606 [0.5]	Global Media and Popular Culture	
COMS 4607 [0.5]	Communication and Food	
COMS 4608 [0.5]	Sound Studies	
COMS 4800 [0.5]	Special Topic in Communication and Media Studies	
COMS 4908 [1.0]	Honours Research Essay	
6. 0.5 credit from:		0.5
COMS 4501 [0.5]	Digital Media Production	
COMS 4502 [0.5]	Storytelling in the Digital Age	
COMS 4503 [0.5]	Visualizing Social Media: Hashtags, keywords, & conversations	
COMS 4504 [0.5]	Engaging the Public: Stakeholders, participation & consultation	
COMS 4505 [0.5]	Professional Writing and Speaking	

COMS 4506 [0.5] Event Management and Community Partnerships

B. Credits Not Included in the Major CGPA (11.0 credits):

7. 8.0 credits in electives not in Communication and Media Studies	8.0
8. 3.0 credits in free electives	3.0
Total Credits	20.0

Communication and Media Studies

B.Co.M.S. Combined Honours (20.0 credits)

Students already admitted to the B.Co.M.S. may register for a combined honours degree in Communication and Media Studies and any other discipline offered within the B.A. Honours degree as a Combined Honours.

A. Credits Included in the Communication Studies Major CGPA (7.0 credits)

1. 1.0 credit from:	1.0
COMS 1001 [0.5] Foundations in Communication and Media Studies	
COMS 1002 [0.5] Current Issues in Communication and Media	
JOUR 1001 [0.5] Foundations: Journalism in Context	
JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society	
2. 1.0 credit in:	1.0
COMS 2003 [0.5] Theoretical Foundations in Communication and Media Studies	
COMS 2004 [0.5] Introduction to Communication Research	
3. 1.5 credits in:	1.5
COMS 3001 [0.5] Quantitative Research in Communication	
COMS 3002 [0.5] Qualitative Research in Communication	
COMS 3500 [0.5] Current Issues in Communication and Media Theory	
4. 1.5 credits from the following, including at least 0.5 credit at the 3000-level:	1.5
FYSM 1217 [0.5] Selected Topics in Communication and Media Studies	
COMS 2200 [0.5] Big Data and Society	
COMS 2300 [0.5] Communication as Propaganda	
COMS 2400 [0.5] Climate Change and Communication	
COMS 2500 [0.5] Communication and Science	
COMS 2501 [0.5] Media Law	
COMS 2504 [0.5] Language and Communication	
COMS 2600 [0.5] Communication and Culture	
COMS 2700 [0.5] Global Media and Communication	
COMS 3100 [0.5] Introduction to Political Management	
COMS 3108 [0.5] Media Industries and the Network Society	
COMS 3109 [0.5] Communication, Culture and Identity	
COMS 3110 [0.5] Comic Books and Graphic Novels	
COMS 3111 [0.5] Racism and Digital Media	
COMS 3302 [0.5] Political Communication	

COMS 3308 [0.5]	Critical Studies in Advertising and Consumer Culture
COMS 3310 [0.5]	Critical Perspectives of Public Relations
COMS 3311 [0.5]	Media and Communication in Regional Contexts
COMS 3400 [0.5]	Ethical Controversies in Media and Communication
COMS 3401 [0.5]	Communications Regulation in Canada
COMS 3403 [0.5]	Communication, Technology and Culture
COMS 3404 [0.5]	Music Industries
COMS 3406 [0.5]	Media Audiences and Users
COMS 3407 [0.5]	Comparative Media Studies
COMS 3410 [0.5]	Visual Media and Communication
COMS 3411 [0.5]	Media and Social Activism
COMS 3412 [0.5]	Communication and Health
COMS 3800 [0.5]	Special Topic in Communication and Media Studies
5. 2.0 credits from:	2.0
COMS 4001 [0.5]	Sport and/as Media
COMS 4002 [0.5]	Media Fandom
COMS 4004 [0.5]	Communication and Discourse
COMS 4305 [0.5]	Media and Religion
COMS 4306 [0.5]	Media and Conflict
COMS 4311 [0.5]	Environmental Communication
COMS 4312 [0.5]	Crisis and Risk Communication
COMS 4313 [0.5]	Screen Studies
COMS 4315 [0.5]	Communication and the Built Environment
COMS 4316 [0.5]	Indigenous Media in Global Contexts
COMS 4317 [0.5]	Digital Media and Global Network Society
COMS 4337 [0.5]	Communication and Public Affairs Strategies
COMS 4401 [0.5]	Global Internet Policy and Governance
COMS 4403 [0.5]	Digital Media Industries
COMS 4405 [0.5]	The Networked Self
COMS 4406 [0.5]	Open Government and Communication
COMS 4407 [0.5]	Communication and Critical Data Studies
COMS 4408 [0.5]	Creative Work
COMS 4410 [0.5]	Mobile Media
COMS 4411 [0.5]	Algorithmic Culture
COMS 4412 [0.5]	Game Studies
COMS 4501 [0.5]	Digital Media Production
COMS 4502 [0.5]	Storytelling in the Digital Age
COMS 4503 [0.5]	Visualizing Social Media: Hashtags, keywords, & conversations
COMS 4504 [0.5]	Engaging the Public: Stakeholders, participation & consultation
COMS 4505 [0.5]	Professional Writing and Speaking
COMS 4506 [0.5]	Event Management and Community Partnerships
COMS 4507 [0.5]	Professional Communication Research

COMS 4602 [0.5]	Children, Youth and Media
COMS 4603 [0.5]	Diaspora and Communication
COMS 4604 [0.5]	Media, Gender and Sexuality
COMS 4605 [0.5]	Media, Race and Ethnicity
COMS 4606 [0.5]	Global Media and Popular Culture
COMS 4607 [0.5]	Communication and Food
COMS 4608 [0.5]	Sound Studies
COMS 4800 [0.5]	Special Topic in Communication and Media Studies
COMS 4908 [1.0]	Honours Research Essay

B. Additional Requirements (13.0 credits) 13.0

6. The requirements from the other discipline must be satisfied

7. Sufficient credits in free electives to total 20.0 credits for the program.

Total Credits 20.0

Communication and Media Studies

B.Co.M.S. (15.0 credits)

The B.Co.M.S. is for students in second year or above who have been previously in the B.Co.M.S. Honours.

A. Credits Included in the Major CGPA (6.0 credits):

1. 1.0 credit from: 1.0

COMS 1001 [0.5] Foundations in Communication and Media Studies

COMS 1002 [0.5] Current Issues in Communication and Media

JOUR 1001 [0.5] Foundations: Journalism in Context

JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society

2. 1.0 credit in: 1.0

COMS 2003 [0.5] Theoretical Foundations in Communication and Media Studies

COMS 2004 [0.5] Introduction to Communication Research

3. 1.5 credits in: 1.5

COMS 3001 [0.5] Quantitative Research in Communication

COMS 3002 [0.5] Qualitative Research in Communication

COMS 3500 [0.5] Current Issues in Communication and Media Theory

4. 2.5 credits from the following, including at least 1.0 credit at the 3000 level: 2.5

FYSM 1217 [0.5] Selected Topics in Communication and Media Studies

COMS 2200 [0.5] Big Data and Society

COMS 2300 [0.5] Communication as Propaganda

COMS 2400 [0.5] Climate Change and Communication

COMS 2500 [0.5] Communication and Science

COMS 2501 [0.5] Media Law

COMS 2504 [0.5] Language and Communication

COMS 2600 [0.5] Communication and Culture

COMS 2700 [0.5] Global Media and Communication

COMS 3100 [0.5] Introduction to Political Management

COMS 3108 [0.5] Media Industries and the Network Society

COMS 3109 [0.5]	Communication, Culture and Identity
COMS 3110 [0.5]	Comic Books and Graphic Novels
COMS 3111 [0.5]	Racism and Digital Media
COMS 3302 [0.5]	Political Communication
COMS 3308 [0.5]	Critical Studies in Advertising and Consumer Culture
COMS 3310 [0.5]	Critical Perspectives of Public Relations
COMS 3311 [0.5]	Media and Communication in Regional Contexts
COMS 3400 [0.5]	Ethical Controversies in Media and Communication
COMS 3401 [0.5]	Communications Regulation in Canada
COMS 3403 [0.5]	Communication, Technology and Culture
COMS 3404 [0.5]	Music Industries
COMS 3406 [0.5]	Media Audiences and Users
COMS 3407 [0.5]	Comparative Media Studies
COMS 3410 [0.5]	Visual Media and Communication
COMS 3411 [0.5]	Media and Social Activism
COMS 3412 [0.5]	Communication and Health
COMS 3800 [0.5]	Special Topic in Communication and Media Studies

B. Credits Not Included in the Major CGPA (9.0 credits):

5. **7.0 credits** in electives not in communication and media studies 7.0

6. **2.0 credits** in free electives. 2.0

Total Credits 15.0

Specialization in Global Media and Communication

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. **4.5 credits** in: Core Courses 4.5

GINS 1000 [0.5] Global History

GINS 1010 [0.5] International Law and Politics

GINS 1020 [0.5] Ethnography, Globalization and Culture

GINS 2000 [0.5] Ethics and Globalization

GINS 2010 [0.5] Globalization and International Economic Issues

GINS 2020 [0.5] Global Literatures

GINS 3010 [0.5] Global and International Theory

GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. **0.0 credit** in: International Experience Requirement Preparation

GINS 1300 [0.0] International Experience Requirement Preparation

3. **7.5 credits** in: the Specialization

a. 1.5 credits in: Foundations 1.5

COMS 1001 [0.5] Foundations in Communication and Media Studies

COMS 1002 [0.5] Current Issues in Communication and Media

COMS 2700 [0.5] Global Media and Communication

b. 1.0 credit in: Introductory Theory and Methods 1.0

COMS 2003 [0.5] Theoretical Foundations in Communication and Media Studies

COMS 2004 [0.5] Introduction to Communication Research

c. 2.0 credits in: Advanced Theory and Methods 2.0

COMS 3001 [0.5] Quantitative Research in Communication

COMS 3002 [0.5] Qualitative Research in Communication

COMS 3400 [0.5] Ethical Controversies in Media and Communication

COMS 3500 [0.5] Current Issues in Communication and Media Theory

d. 3.0 credits from: Advanced Core 3.0

(at least 1.0 credits at the 3000 level)

COMS 3108 [0.5] Media Industries and the Network Society

COMS 3109 [0.5] Communication, Culture and Identity

COMS 3311 [0.5] Media and Communication in Regional Contexts

COMS 4306 [0.5] Media and Conflict

COMS 4316 [0.5] Indigenous Media in Global Contexts

COMS 4317 [0.5] Digital Media and Global Network Society

COMS 4401 [0.5] Global Internet Policy and Governance

COMS 4406 [0.5] Open Government and Communication

COMS 4603 [0.5] Diaspora and Communication

COMS 4605 [0.5] Media, Race and Ethnicity

COMS 4606 [0.5] Global Media and Popular Culture

COMS 4908 [1.0] Honours Research Essay

B. Credits Not Included in the Major CGPA (8.0 credits)

4. **8.0 credits** in: free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Stream in Global Media and Communication B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits** in: Core Courses 4.0

GINS 1000 [0.5] Global History

GINS 1010 [0.5] International Law and Politics

GINS 1020 [0.5] Ethnography, Globalization and Culture

GINS 2000 [0.5] Ethics and Globalization

GINS 2010 [0.5] Globalization and International Economic Issues

GINS 2020 [0.5] Global Literatures

GINS 3010 [0.5] Global and International Theory

GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits** from: the Stream 4.0

a. Foundations	
COMS 1001 [0.5]	Foundations in Communication and Media Studies
COMS 1002 [0.5]	Current Issues in Communication and Media
COMS 2700 [0.5]	Global Media and Communication
b. Introductory Theory and Methods	
COMS 2003 [0.5]	Theoretical Foundations in Communication and Media Studies
COMS 2004 [0.5]	Introduction to Communication Research
c. Advanced Theory and Methods	
COMS 3001 [0.5]	Quantitative Research in Communication
COMS 3002 [0.5]	Qualitative Research in Communication
COMS 3500 [0.5]	Current Issues in Communication and Media Theory
d. Advanced Core	
COMS 3108 [0.5]	Media Industries and the Network Society
COMS 3109 [0.5]	Communication, Culture and Identity
COMS 3311 [0.5]	Media and Communication in Regional Contexts
B. Credits Not Included in the Major CGPA (7.0 credits)	
3. 7.0 credits in:	free electives 7.0
C. Additional Requirements	
4. The Language requirement must be met.	
Total Credits	15.0

Minor in Communication and Media Studies (4.0 credits)

This Minor is open to all undergraduate degree students in programs other than Communication and Media Studies, and B.G.In.S. Global Media and Communication.

Requirements:

1. 1.0 credit from:	1.0
COMS 1001 [0.5]	Foundations in Communication and Media Studies
COMS 1002 [0.5]	Current Issues in Communication and Media
JOUR 1001 [0.5]	Foundations: Journalism in Context
JOUR 1002 [0.5]	Foundations: Practicing Journalism in a Diverse Society
2. 1.0 credit in:	1.0
COMS 2003 [0.5]	Theoretical Foundations in Communication and Media Studies
COMS 2004 [0.5]	Introduction to Communication Research
3. 2.0 credits, including at least 1.5 credit at the 3000 level, chosen from:	2.0
FYSM 1217 [0.5]	Selected Topics in Communication and Media Studies
COMS 2200 [0.5]	Big Data and Society
COMS 2300 [0.5]	Communication as Propaganda
COMS 2500 [0.5]	Communication and Science
COMS 2501 [0.5]	Media Law
COMS 2504 [0.5]	Language and Communication

COMS 2600 [0.5]	Communication and Culture
COMS 2700 [0.5]	Global Media and Communication
COMS 3100 [0.5]	Introduction to Political Management
COMS 3108 [0.5]	Media Industries and the Network Society
COMS 3109 [0.5]	Communication, Culture and Identity
COMS 3302 [0.5]	Political Communication
COMS 3308 [0.5]	Critical Studies in Advertising and Consumer Culture
COMS 3310 [0.5]	Critical Perspectives of Public Relations
COMS 3311 [0.5]	Media and Communication in Regional Contexts
COMS 3400 [0.5]	Ethical Controversies in Media and Communication
COMS 3401 [0.5]	Communications Regulation in Canada
COMS 3403 [0.5]	Communication, Technology and Culture
COMS 3404 [0.5]	Music Industries
COMS 3406 [0.5]	Media Audiences and Users
COMS 3407 [0.5]	Comparative Media Studies
COMS 3410 [0.5]	Visual Media and Communication
COMS 3411 [0.5]	Media and Social Activism
COMS 3412 [0.5]	Communication and Health
COMS 3800 [0.5]	Special Topic in Communication and Media Studies
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Journalism and Communication and Media Studies

B.J. Combined Honours (20.0 credits)

This program is available only to students registered in the Bachelor of Journalism program.

A. Credits Included in the Journalism Major CGPA (8.0 credits):

1. 6.0 credits in:	6.0
JOUR 1001 [0.5]	Foundations: Journalism in Context
JOUR 1002 [0.5]	Foundations: Practicing Journalism in a Diverse Society
JOUR 2201 [1.0]	Fundamentals of Reporting
JOUR 2202 [0.5]	Digital Journalism Toolkit
JOUR 2501 [0.5]	Media Law
JOUR 3207 [0.5]	Audio Journalism
JOUR 3208 [0.5]	Video Journalism
JOUR 3225 [0.5]	Reporting in Depth
JOUR 3235 [0.5]	Digital Journalism
JOUR 3300 [0.5]	Media Ethics in a Digital World
JOUR 4001 [0.5]	Journalism Now - and Next
2. 2.0 credits from	2.0
- Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism (at least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses)	

Journalism Publications

JOUR 4003 [0.5]	The Digital Hub: Advanced Multimedia
JOUR 4004 [0.5]	The Digital Hub: Advanced Audio
JOUR 4005 [0.5]	The Digital Hub: Advanced Video

Specialized Journalism

JOUR 4300 [0.5]	Specialized Journalism: Special Topic
JOUR 4301 [0.5]	Specialized Journalism: Business and the Markets
JOUR 4302 [0.5]	Specialized Journalism: Business and Canadian Society
JOUR 4303 [0.5]	Specialized Journalism: Health and Science
JOUR 4304 [0.5]	Specialized Journalism: Environment and Science
JOUR 4305 [0.5]	Specialized Journalism: Canada and the U.S.
JOUR 4306 [0.5]	Specialized Journalism: Canada and the World
JOUR 4309 [0.5]	Specialized Journalism: Arts and Culture
JOUR 4308 [0.5]	Specialized Journalism: Sports and Sport Culture
JOUR 4310 [0.5]	Specialized Journalism: Justice and the Law
JOUR 4311 [0.5]	Specialized Journalism: Justice and The Supreme Court

Professional Skills

JOUR 4400 [0.5]	Professional Skills: Special Topic
JOUR 4401 [0.5]	Professional Skills: Data Storytelling
JOUR 4402 [0.5]	Professional Skills: Longform Writing
JOUR 4403 [0.5]	Professional Skills: Strategic Communication
JOUR 4404 [0.5]	Professional Skills: Freelancing for Media Professionals

Investigating Journalism

JOUR 4500 [0.5]	Investigating Journalism: Special Topic
JOUR 4501 [0.5]	Investigating Journalism: Gender, Identity and Inequality
JOUR 4502 [0.5]	Investigating Journalism: Journalism and Conflict
JOUR 4503 [0.5]	Investigating Journalism: Journalism, Indigenous Peoples and Canada
JOUR 4504 [0.5]	Investigating Journalism: The Media and International Development
JOUR 4505 [1.0]	Investigating Journalism: The Power and Politics of Government

B. Credits Included in the Communication and Media Studies Major CGPA (7.0 credits):

3. 1.0 credit in: 1.0

COMS 2003 [0.5]	Theoretical Foundations in Communication and Media Studies
COMS 2004 [0.5]	Introduction to Communication Research

4. 1.5 credits in: 1.5

COMS 3001 [0.5]	Quantitative Research in Communication
COMS 3002 [0.5]	Qualitative Research in Communication
COMS 3500 [0.5]	Current Issues in Communication and Media Theory

5. 2.5 credits, including at least 0.5 credit at the 3000 level, 2.5 chosen from:

COMS 2200 [0.5]	Big Data and Society
COMS 2300 [0.5]	Communication as Propaganda
COMS 2500 [0.5]	Communication and Science
COMS 2501 [0.5]	Media Law
COMS 2504 [0.5]	Language and Communication
COMS 2600 [0.5]	Communication and Culture
COMS 2700 [0.5]	Global Media and Communication
COMS 3100 [0.5]	Introduction to Political Management
COMS 3108 [0.5]	Media Industries and the Network Society
COMS 3109 [0.5]	Communication, Culture and Identity
COMS 3302 [0.5]	Political Communication
COMS 3308 [0.5]	Critical Studies in Advertising and Consumer Culture
COMS 3310 [0.5]	Critical Perspectives of Public Relations
COMS 3311 [0.5]	Media and Communication in Regional Contexts
COMS 3400 [0.5]	Ethical Controversies in Media and Communication
COMS 3401 [0.5]	Communications Regulation in Canada
COMS 3403 [0.5]	Communication, Technology and Culture
COMS 3404 [0.5]	Music Industries
COMS 3406 [0.5]	Media Audiences and Users
COMS 3407 [0.5]	Comparative Media Studies
COMS 3410 [0.5]	Visual Media and Communication
COMS 3411 [0.5]	Media and Social Activism
COMS 3412 [0.5]	Communication and Health
COMS 3800 [0.5]	Special Topic in Communication and Media Studies

6. 2.0 credits from: 2.0

COMS 4004 [0.5]	Communication and Discourse
COMS 4305 [0.5]	Media and Religion
COMS 4306 [0.5]	Media and Conflict
COMS 4311 [0.5]	Environmental Communication
COMS 4312 [0.5]	Crisis and Risk Communication
COMS 4313 [0.5]	Screen Studies
COMS 4315 [0.5]	Communication and the Built Environment
COMS 4316 [0.5]	Indigenous Media in Global Contexts
COMS 4317 [0.5]	Digital Media and Global Network Society
COMS 4337 [0.5]	Communication and Public Affairs Strategies
COMS 4401 [0.5]	Global Internet Policy and Governance
COMS 4403 [0.5]	Digital Media Industries

COMS 4405 [0.5]	The Networked Self	
COMS 4406 [0.5]	Open Government and Communication	
COMS 4407 [0.5]	Communication and Critical Data Studies	
COMS 4408 [0.5]	Creative Work	
COMS 4410 [0.5]	Mobile Media	
COMS 4411 [0.5]	Algorithmic Culture	
COMS 4412 [0.5]	Game Studies	
COMS 4501 [0.5]	Digital Media Production	
COMS 4502 [0.5]	Storytelling in the Digital Age	
COMS 4503 [0.5]	Visualizing Social Media: Hashtags, keywords, & conversations	
COMS 4504 [0.5]	Engaging the Public: Stakeholders, participation & consultation	
COMS 4505 [0.5]	Professional Writing and Speaking	
COMS 4506 [0.5]	Event Management and Community Partnerships	
COMS 4602 [0.5]	Children, Youth and Media	
COMS 4603 [0.5]	Diaspora and Communication	
COMS 4604 [0.5]	Media, Gender and Sexuality	
COMS 4605 [0.5]	Media, Race and Ethnicity	
COMS 4606 [0.5]	Global Media and Popular Culture	
COMS 4607 [0.5]	Communication and Food	
COMS 4608 [0.5]	Sound Studies	
COMS 4800 [0.5]	Special Topic in Communication and Media Studies	
COMS 4908 [1.0]	Honours Research Essay	
C. Additional Requirements (5.0 credits)		
7.a. 0.5 credit from:		0.5
HIST 1301 [0.5]	Conflict and Change in Early Canadian History	
HIST 1302 [0.5]	Rethinking Modern Canadian History	
HIST 2301 [0.5]	Canadian Political History	
HIST 2304 [1.0]	Social and Cultural History of Canada (See Item 8 below)	
HIST 2311 [0.5]	Environmental History of Canada	
b. 0.5 credit from:		0.5
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	
INDG 2011 [0.5]	Contemporary Indigenous Studies	
8. Approved electives to make up a total of 20.0 credits. Students who take HIST 2304 to fulfill Item 7a will have 0.5 credits less to complete.		4.0
Total Credits		20.0

Communication and Media Studies

B.A. Combined Honours (20.0 credits)

Students enrolled in a single discipline within a B.A. Honours program may add Communication and Media Studies as a second discipline within a B.A. Combined Honours. Communication and Media Studies course requirements for the B.A. Combined Honours are the same as those for the B.Co.M.S. Combined Honours.

Regulations

The regulations presented in this section apply to all Bachelor of Communication Studies (B.Co.M.S.) programs.

In addition to program requirements, B.Co.M.S. students must satisfy the Academic Regulations of the University, and the same Breadth requirements that apply to students enrolled in B.A. programs, described below. Students should consult with the School of Journalism and Communication when selecting courses and planning their program.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree.

The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new

program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process

operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Communication and Media Studies Honours: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Communication and Media Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Communication and Media Studies Honours students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: COMS 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	
Summer		Summer	W	Summer	W	Summer	S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite

averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Communication and Media Studies (B.Co.M.S.) (Honours)
- Bachelor of Communication and Media Studies (B.Co.M.S.)

Admission Requirements

First Year

B. Co.M.S. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

B. Co.M.S.

Access to the B.Co.M.S. degree is limited to B.Co.M.S. (Honours) students who apply to transfer.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Communication and Media Studies (Honours);
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Communication and Media Studies (COMS) Courses

COMS 1001 [0.5 credit]

Foundations in Communication and Media Studies

An exploration of past and present media, patterns of change, and key approaches to their study.

Includes: Experiential Learning Activity

Precludes additional credit for COMS 1000, COMM 1101.

Lecture and discussion groups.

COMS 1002 [0.5 credit]

Current Issues in Communication and Media

An exploration of communication and media in relation to contemporary political, technological and cultural issues, with a focus on Canada.

Includes: Experiential Learning Activity

Precludes additional credit for COMS 1000, COMM 1101.

Lecture and discussion groups.

COMS 2003 [0.5 credit]

Theoretical Foundations in Communication and Media Studies

The development of communication theory in the context of major social, economic and cultural periods and events. Emphasis on the central debates and traditions that have shaped and defined the field.

Precludes additional credit for COMM 2101 (no longer offered) and COMM 2100 (no longer offered).

Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second-year standing in Communication and Media Studies (including BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion groups three hours a week

COMS 2004 [0.5 credit]

Introduction to Communication Research

Introduction to the scientific method as interpreted through major traditions in Communication and Media Studies. The course addresses the relationship between theory and evidence, research design, ethics and data management.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 2000 (no longer offered), COMM 2001 (no longer offered).

Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second year standing in Communication and Media Studies (including BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

COMS 2200 [0.5 credit]

Big Data and Society

How big data and small data shape society. Databases as a form of media. Topics may include: data policy and regulation, the politics and ethics of big data, data and decision-making, and data as discourse.

Includes: Experiential Learning Activity

Prerequisite(s): Second-year standing or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2300 [0.5 credit]**Communication as Propaganda**

How business, government, and civil society actors have used media messages to persuade, influence, and manipulate the public. The impacts of propaganda on individuals and society, the roles of different media technologies in facilitating propaganda, and public resistance to propaganda.

Precludes additional credit for COMM 2301 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAPM 1000, and second-year standing in Communication and Media Studies (including BPAPM and BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2400 [0.5 credit]**Climate Change and Communication**

The class examines the role of communication in shaping the relationship of climate change, science, politics, popular culture, social movements, technology, and societal transformation.

Prerequisite(s): Second year standing and enrollment in Communication and Media Studies or permission from the School of Journalism and Communication.

Lecture, three hours a week

COMS 2500 [0.5 credit]**Communication and Science**

How expert knowledge (particularly scientific, medical, and technical) is communicated in the public realm. Topics may include scientific advances and new technologies, health risks, environmental/ climate change, and cultural/ ideological positioning of science.

Prerequisite(s): second-year standing or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2501 [0.5 credit]**Media Law**

A survey of laws that affect the Canadian media including the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common-law limitations on freedoms of the press, including publication bans, libel and contempt of court.

Also listed as JOUR 2501, MPAD 2501.

Precludes additional credit for COMM 2501 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAPM 1000, and second-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lecture three hours a week.

COMS 2504 [0.5 credit]**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers, including the nature of meaning, the connections between language, communication and cognition, and language as a social activity.

Also listed as PHIL 2504, LING 2504.

Precludes additional credit for COMM 2504 (no longer offered).

Prerequisite(s): second-year standing.

Lectures three hours a week.

COMS 2600 [0.5 credit]**Communication and Culture**

An introduction to the major industries, institutions, regulatory frameworks and key organizations responsible for cultural production in Canada.

Precludes additional credit for COMM 2401 (no longer offered), COMM 2601 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2700 [0.5 credit]**Global Media and Communication**

An introduction to global media and communication, with an emphasis on debates about media power and expansion, digitalization, technology transfer, and societal implications/changes. Students will investigate historical and contemporary contexts of global and transnational communication through a variety of approaches and perspectives.

Precludes additional credit for COMM 3405/JOUR 3405 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies (including BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3001 [0.5 credit]**Quantitative Research in Communication**

An introduction to basic statistical methods in media and communication studies.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3001 (no longer offered).

Prerequisite(s): COMS 2004 and third-year standing in Communication and Media Studies, or third-year standing in BPAPM- or BGIInS-related specializations and streams, or permission of the School of Journalism and Communication.

Lecture and lab three hours a week.

COMS 3002 [0.5 credit]**Qualitative Research in Communication**

An introduction to interpretive methods in media and communication studies.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3002 (no longer offered).

Prerequisite(s): COMS 2004 and third-year standing in Communication and Media Studies, or third-year standing in BPAPM- or BGIInS-related specializations and streams, or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

COMS 3100 [0.5 credit]**Introduction to Political Management**

Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.

Also listed as POLM 3000, PSCI 3410.

Precludes additional credit for COMM 3100 (no longer offered).

Prerequisite(s): third-year standing.

Lectures three hours a week.

COMS 3108 [0.5 credit]**Media Industries and the Network Society**

Examines the theoretical frameworks and major issues and debates relating to media industries and institutions in Canada and internationally.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3108 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3109 [0.5 credit]**Communication, Culture and Identity**

Examines the relationship between media, communication, and identity categories. The course explores identity formation as a cultural phenomenon including questions of race, ethnicity, gender, class, and sexuality.

Precludes additional credit for COMM 3109 (no longer offered).

Prerequisite(s): third-year standing and enrollment in Communication and Media Studies (including BGIInS related specializations and streams) or in the Minor in Critical Race Studies, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3110 [0.5 credit]**Comic Books and Graphic Novels**

The history, political economy, and culture of comics as a distinct medium of communication, and the relationship between comic book publishing and other cultural industries.

Prerequisite(s): Third year standing and enrollment in Communication and Media Studies or permission from the School of Journalism and Communication.

Lecture, three hours a week

COMS 3111 [0.5 credit]**Racism and Digital Media**

Explores the historical, social, and systemic underpinnings of racism in relation to digital media. The course considers the emergence of digital media and its impact on racism. Students will learn about several relations, from World War II computers, to Web 2.0, to activism, and more.

Prerequisite(s): Third year standing in Communication and Media Studies or permission from the School of Journalism and Communication.

Lecture, three hours a week

COMS 3302 [0.5 credit]**Political Communication**

Examines the relationship between various kinds of communication and political activity in a variety of contexts. Case studies will be drawn from speeches, political campaigns, and debates, using a variety of media forms, from photographs to web sites.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3302 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3308 [0.5 credit]**Critical Studies in Advertising and Consumer Culture**

A critical analysis of major constructs and basic mechanisms of advertising, social marketing and other aspects of consumer culture. The course examines the social, political-economic and cultural implications of consumer culture.

Precludes additional credit for COMM 3301 (no longer offered) and COMM 3308 (no longer offered).

Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures and discussion groups three hours a week.

COMS 3310 [0.5 credit]**Critical Perspectives of Public Relations**

A critical examination of key aspects of public relations, including histories of PR, media representations of PR, gender and public relations, and the role of PR in business, politics and civil society.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4304 (no longer offered).

Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3311 [0.5 credit]**Media and Communication in Regional Contexts**

Provides a historical overview of the development of media technologies, and an understanding of the place of media within the political, regulatory, and legal activities of different international regions (e.g., Europe, Asia, Africa, Latin America, etc.).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3400 [0.5 credit]**Ethical Controversies in Media and Communication**

Explores ethical problems and controversies relating to research in media and communication. Focuses on rights and responsibilities of researchers and practitioners as relates to media consumers, producers, and professional communicators in an age when communication circulates quickly within and across borders and other boundaries.

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3401 [0.5 credit]**Communications Regulation in Canada**

Examines historical and contemporary issues in the regulation of communication practices and institutions in Canada.

Precludes additional credit for COMM 3401 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3403 [0.5 credit]**Communication, Technology and Culture**

Examines the relationship between communication technology and society, including factors that contribute to changes in the collection, storage and distribution of information and their cultural implications.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3403 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lecture three hours a week.

COMS 3404 [0.5 credit]**Music Industries**

An introduction to the structure and history of the music industries.

Also listed as MUSI 3403.

Precludes additional credit for COMM 3404 (no longer offered).

Prerequisite(s): second year standing.

Lectures three hours a week.

COMS 3406 [0.5 credit]**Media Audiences and Users**

Examines the role of audiences in contemporary media industries. Topics include history of audience studies, ratings and the audience commodity, active audience theory, and media fandom.

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3407 [0.5 credit]**Comparative Media Studies**

The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.

Also listed as JOUR 3407.

Precludes additional credit for COMM 3407 (no longer offered).

Prerequisite(s): Third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3410 [0.5 credit]**Visual Media and Communication**

Examines the central importance of visual imagery in contemporary media, culture and everyday life. Draws connections between historical/contemporary explanations of 'the visual,' and how texts and technologies reflect the context and cultural values of the environments that produce them, and the challenges for regulation.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3411 [0.5 credit]**Media and Social Activism**

Examines links between media and activism through the lens of past and present social movements and protest events. Addresses leading theories that help conceptualize various types of activist movements, with a focus on the role of media in shaping activist identity and political opportunity.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3412 [0.5 credit]**Communication and Health**

The concept of health as a sociocultural phenomenon; the many ways that health issues are communicated, defined, represented, and framed.

Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3500 [0.5 credit]**Current Issues in Communication and Media Theory**

Examines theoretical debates and issues facing the field of Communication and Media Studies today.

Precludes additional credit for COMM 2101, COMM 2102 (no longer offered).

Prerequisite(s): COMS 2003 and third-year standing in Communication and Media Studies (including BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion groups three hours a week.

COMS 3800 [0.5 credit]**Special Topic in Communication and Media Studies**

A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.

Prerequisite(s): third-year standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lecture three hours a week.

COMS 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

COMS 4001 [0.5 credit]**Sport and/as Media**

A critical exploration of the culture and political economy of sport including cultural norms and questions of representation in and around sports across an array of media.

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission from the School of Journalism and Communication.

Seminar, 3 hours a week

COMS 4002 [0.5 credit]**Media Fandom**

Examines media fans as audiences. Topics may include fan cultures, digital fandom, identity, and audience labour.

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission from the School of Journalism and Communication.

Recommended: COMS 3406: Media Audiences and Users.

Seminar, 3 hours a week

COMS 4004 [0.5 credit]**Communication and Discourse**

Examines the development of theory and methods related to discourse and its use in the analysis of images and texts.

Precludes additional credit for COMM 4004 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4305 [0.5 credit]**Media and Religion**

Critical examination of the ways religion mediates communicative practices, engages with media technologies, and is mediated in mainstream or popular culture. Topics may include: secularization and post-secularization; the politics of representation; religious organizations as communicative actors; fundamentalism.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4306 [0.5 credit]**Media and Conflict**

Media representations of conflict such as war and terrorism, and how they influence the collective imagination.

Precludes additional credit for COMM 4306 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4311 [0.5 credit]**Environmental Communication**

Examines environmental, animal, and earth observing media and pays special attention to the production of visual materials. The course explores the influence of media systems on the production, dissemination, and meaning of environmental observations and looks at sites of contemporary environmental contention.

Prerequisite(s): fourth-year Honours standing and enrollment in Communication and Media Studies or in the Minor in Environmental and Climate Humanities, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4312 [0.5 credit]**Crisis and Risk Communication**

Examines crises and risks from the perspective of communication. The course explores the role of various media in shaping risk perceptions and constructions of crisis, the politics of crisis and risk management, symbolic dimensions in crisis construction, and ethical dilemmas.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4313 [0.5 credit]**Screen Studies**

Issues in the past, present and future of film, television and related media. Screens are examined as media that represent and shape values and culture, as technologies that are produced and purchased, and as objects that are regulated through policy.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4315 [0.5 credit]**Communication and the Built Environment**

How communication occurs in conjunction with the built environment, with special attention to cultural artefacts such as houses, schools, factories, prisons, office buildings, roads, parks, and the urban (and suburban) environment. Various models, theories, and philosophies of the built environment are considered.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4316 [0.5 credit]**Indigenous Media in Global Contexts**

Overview of Indigenous global media exploring film and film festivals, television networks, media arts, and the Internet. We will discuss struggles over mediated self-representation as well as debates over what constitutes Indigenous media relating to aesthetics, community affiliation, and identity.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4317 [0.5 credit]**Digital Media and Global Network Society**

A critical and analytical understanding of the way digital media are reshaping society and are shaped by societal structures and forces; on the implications of digital media on various aspects of social life globally, including culture, politics, law, privacy, journalism, and collective organizing/social movements.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies (including BPAPM and BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4337 [0.5 credit]**Communication and Public Affairs Strategies**

This hands-on course teaches students how to develop, design, and execute a public affairs strategy. Emphasis on understanding the interaction between public institutions and stakeholders and how effective public affairs strategies can be designed to help organizations achieve goals through public or opinion leader persuasion.

Includes: Experiential Learning Activity

Also listed as PAPM 4000.

Prerequisite(s): fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4401 [0.5 credit]**Global Internet Policy and Governance**

Public interest and policy battles over critical internet resources and implications for development of the internet, citizens' rights and freedoms, the economy, and democratic culture; common carriage, privacy, security and surveillance, access, speech rights, and diversity of information sources.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4401 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM and BGLnS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4403 [0.5 credit]**Digital Media Industries**

Key approaches to the study of media as industries and how economics, markets and technologies intersect with social choices, politics and power to shape how decisions are made about the design, ownership, organization and control of media.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4403 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4405 [0.5 credit]**The Networked Self**

How notions of identity are changing as we conduct our lives through networked media and communication such as social media, online search, the Internet of Things, and wearable devices. Subjectivity, personhood, posthumanism, algorithmic control, and privacy.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4406 [0.5 credit]**Open Government and Communication**

The contemporary open government movement; how communication can be used to improve governance and to foster a more collaborative relationship between governments and citizens. Access to information, the challenges of open data, expectations of transparency, and models of citizen engagement/consultation.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM and BGLnS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4407 [0.5 credit]**Communication and Critical Data Studies**

Theoretical perspectives, ethical problems, and contemporary issues relevant to communication and data studies. Students will critically examine the rise of 'big data' and 'datafication' as socio-technical phenomena that have become a crucial part of our communication landscape.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4408 [0.5 credit]**Creative Work**

Contemporary trends affecting creative work in cultural industries. How careers in the arts, culture and media are increasingly desirable as a way for individual workers to find personal fulfillment and as a means of reinvigorating post-industrial economies.

Prerequisite(s): fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4410 [0.5 credit]**Mobile Media**

Critical examination of the history, development, and expansion of mobile media and its impact on culture, connectivity, and practice; locative media practices, geo-coding, wireless communication, mobile technologies, and user experience in everyday life.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4411 [0.5 credit]**Algorithmic Culture**

The ways in which computerized algorithms engage in the traditional work of culture: the sorting, classifying, and hierarchizing of people, places, objects, and ideas to produce new habits of thought, conduct, expression, and material outcomes.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4412 [0.5 credit]**Game Studies**

Games as media. The history of gaming and mediated play in terms of technology and form, industry, labour, gender and subcultural practice.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4501 [0.5 credit]**Digital Media Production**

This workshop introduces practice-based tools and techniques relevant in contemporary professional communication, such as basic web development, podcasting, and digital photography.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4502 [0.5 credit]**Storytelling in the Digital Age**

In this workshop students learn to write compelling stories for the digital age. They engage with examples of great storytelling across print and online platforms, from magazines and newspapers to blogs and podcasts, to gain a deeper understanding of what makes some stories stand out.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4503 [0.5 credit]**Visualizing Social Media: Hashtags, keywords, & conversations**

This workshop introduces a range of methods and practices in data mining and analytics. Techniques include data and text mining, data analysis (including sentiment and social network analysis), data visualization and modeling. Opportunity to work with analytics and mapping software on students' own projects.

Includes: Experiential Learning Activity

Prerequisite(s): COMS 3001 and fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4504 [0.5 credit]**Engaging the Public: Stakeholders, participation & consultation**

This workshop introduces the challenges of conceptualizing and conducting public consultations. This includes audience or participant selection, a range of consultation techniques and formats, marketing and communication, analysis, as well as an awareness of policies and regulations governing consultations.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4505 [0.5 credit]**Professional Writing and Speaking**

In this workshop students develop skills in professional written communication, such as press releases, blogs, op-eds, policy briefs, and speeches. Students will also hone their public speaking skills presenting their written work in different formats.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4506 [0.5 credit]**Event Management and Community Partnerships**

This workshop introduces the stages of event management for potential community partners. This includes conceptualization, marketing and sponsorships, production and financing, to risk management.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4507 [0.5 credit]**Professional Communication Research**

Students will work in a team-based environment to carry out empirical research in support of current faculty-led projects. In addition to learning advanced research techniques, students will develop project management and collaborative research skills.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4000 (no longer offered), COMM 4002 (no longer offered), COMS 4006 (no longer offered).

Prerequisite(s): COMS 3001 or COMS 3002, and fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4602 [0.5 credit]**Children, Youth and Media**

Historical and contemporary ways in which children and youth relate to the media and popular culture.

Precludes additional credit for COMM 4602 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4603 [0.5 credit]**Diaspora and Communication**

The impact of various forms of diasporic communication on the shaping of contemporary national and international society.

Precludes additional credit for COMM 4603 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4604 [0.5 credit]**Media, Gender and Sexuality**

Critical examination of the intersection of media and gender, including constructions of femininity, masculinity, and other issues of sexuality.

Precludes additional credit for COMM 3601 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4605 [0.5 credit]**Media, Race and Ethnicity**

Critical examination of how issues of race and ethnicity intersect with contemporary media.

Precludes additional credit for COMM 3602 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4606 [0.5 credit]**Global Media and Popular Culture**

Key theories and concepts that have shaped the study of global media and its impact on popular cultures around the world.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4607 [0.5 credit]**Communication and Food**

Food in and as communication. Food and identity, food and culture, food environments, food systems, food politics, and food and community development.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4608 [0.5 credit]**Sound Studies**

How hearing and listening practices have changed over time, and the role of sound technology in shaping our understanding of each other, our world, and ourselves.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4800 [0.5 credit]**Special Topic in Communication and Media Studies**

A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4908 [1.0 credit]**Honours Research Essay**

The Honours Research Essay (HRE) provides eligible students with an opportunity to complete an independent research essay under the supervision of a faculty member.

The HRE must be completed over two consecutive academic terms, beginning in the fall term.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4908 (no longer offered).

Prerequisite(s): fourth year honours standing in Communication and Media Studies (including BGIInS related specializations), with a CGPA of 10.0 or higher, or permission of the Undergraduate Supervisor.

Unscheduled.

Community Engagement (Minor)

This section presents the requirements for programs in:

- Minor in Community Engagement

Minor in Community Engagement (4.0 credits)

This minor is open to all undergraduate degree students in any program. Students in any Sociology or Anthropology major should select courses carefully if they wish to use courses from the major in their minor. Such students should always consult the department.

Requirements:

1. 0.5 credit from: 0.5

ANTH 2180 [0.5]	Foundations in Community Engagement	
SOCI 2180 [0.5]	Foundations in Community Engagement	
2. 0.5 credit from:		0.5
ANTH 4171 [0.5]	Community Engagement Capstone	
SOCI 4171 [0.5]	Community Engagement Capstone	
3. 1.0 credit from	Engaging the Community courses:	1.0
AFRI 3900 [0.5]	Placement	
ANTH 4000 [0.5]	Field Placement in Anthropology	
ANTH 4100 [0.5]	Ethnographic Field Course	
ARTH 3701 [0.5]	Art and Architecture on Site	
ARTH 4701 [0.5]	Art and Architecture on Site	
CDNS 1101 [0.5]	Power, Places and Stories in/of Odawang/Ottawa	
CDNS 4800 [1.0]	Internship Practicum	
CRCJ 3901 [1.0]	Practicum in Criminology I	
CRCJ 3902 [1.0]	Practicum in Criminology II	
DIGH 4005 [0.5]	Digital Humanities Practicum	
ENST 4450 [0.5]	Community-Engaged Research	
GEOG 3030 [0.5]	Regional Field Excursion	
GEOG 4000 [0.5]	Field Studies	
GEOG 4450 [0.5]	Community-Engaged Research	
GINS 3100 [0.5]	Global and International Group Project	
GINS 3900 [0.5]	International Placement	
GINS 3901 [1.0]	International Placement	
GINS 3930 [0.5]	Carleton International Placement	
GINS 3931 [1.0]	Carleton International Placement	
HIST 3807 [0.5]	Practicum in History	
HIST 3815 [0.5]	Group Practicum	
HLTH 4909 [1.0]	Capstone Course – Field Placement and Research Project	
HUMR 4905 [0.5]	Practicum Placement in Human Rights I	
INDG 4001 [0.5]	Indigeneity in the City	
INDG 4015 [0.5]	Land as a Relation	
INDG 4020 [0.5]	Practicum	
LAWS 4905 [1.0]	Full-Year Service Learning Placement	
MPAD 3002 [0.5]	Civic Engagement and Public Institutions I	
MPAD 3003 [0.5]	Civic Engagement and Public Institutions II: Minor Design Project	
PHIL 2320 [0.5]	Children, Literature, and Philosophy	
PSCI 3906 [1.0]	Full-Year Political Science Internship	
PSCI 3907 [0.5]	One-Term Political Science Internship	
PSYC 3901 [0.5]	Practicum in Psychology	
PSYC 3902 [0.5]	Practicum in Psychology	
PSYC 3905 [1.0]	Practicum in Psychology	
PSYC 4330 [1.0]	Community Mental Health and Well-Being	
SOCI 3950 [0.5]	Practicum Placement in Sociology	
SOCI 4170 [0.5]	Community-Engaged Sociology	
WGST 4800 [0.5]	Women's and Gender Studies Practicum	

WGST 4801 [1.0]	Women's and Gender Studies Practicum	
4. 2.0 credits from	Critically Understanding Communities	2.0
	courses:	
AFRI 3100 [0.5]	African Studies Abroad: Selected Topics	
ALDS 3205 [0.5]	English as a Global Language	
ANTH 2020 [0.5]	Race and Ethnicity	
ANTH 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research	
ANTH 2680 [0.5]	Anthropology of "Mainstream" North America	
ANTH 3005 [0.5]	Ethnographic Research Methods	
ANTH 3010 [0.5]	Language, Culture, and Globalization	
ANTH 3020 [0.5]	Studies in Race and Ethnicity	
ANTH 3025 [0.5]	Anthropology and Human Rights	
ANTH 3310 [0.5]	Studies in Medical Anthropology	
ANTH 3355 [0.5]	Anthropology and the Environment	
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums	
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples	
ANTH 3800 [0.5]	Studies in Applied and Participatory Anthropology	
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology	
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples	
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	
CDNS 2210 [0.5]	Introduction to the Study of Culture in Canada	
CRST 2001 [0.5]	Introduction to Critical Race Studies	
DBST 2001 [0.5]	Disabling Society	
DBST 3001 [0.5]	Disability Studies: Policy and Activism	
DIGH 3814 [0.5]	Crafting Digital History	
ENGL 3608 [0.5]	Topics in Theatre Management	
ENGL 3920 [0.5]	Literary Ecological Fieldwork	
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	
FILM 2204 [0.5]	Indigenous Cinema and Media	
FYSM 1212 [0.5]	Contemporary Moral, Social, and Religious Issues	
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
GEOG 3021 [0.5]	Geographies of Culture and Identity	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3206 [0.5]	Health, Environment, and Society	
GEOG 3404 [0.5]	Geographies of Economic Development	
GEOG 3501 [0.5]	Geographies of the Canadian North	
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place	

GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change	PSCI 2500 [0.5]	Gender and Politics
GEOG 4323 [0.5]	Urban and Regional Planning	PSCI 3006 [0.5]	Social Power in Canadian Politics
GINS 3300 [0.5]	Global and International Studies Abroad: Selected Topics	PSYC 2301 [0.5]	Introduction to Health Psychology
HIST 2811 [0.5]	Public History from Memory to Museums	SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
HIST 3814 [0.5]	Crafting Digital History	SOCI 2020 [0.5]	Race and Ethnicity
HLTH 2003 [0.5]	Social Determinants of Health	SOCI 2030 [0.5]	Work, Industry and Occupations
HLTH 3101 [0.5]	Global Health	SOCI 2040 [0.5]	Food, Culture and Society
HLTH 3102 [0.5]	Indigenous Health in a Global World	SOCI 2043 [0.5]	Sociology of the Family
HUMR 3504 [0.5]	Public Health and Human Rights	SOCI 2045 [0.5]	Gender and Society
IDES 2600 [0.5]	Human Factors/Ergonomics in Design	SOCI 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research
IDES 3107 [0.5]	Design and Sustainability	SOCI 2170 [0.5]	Foundations in Social Justice
IDES 3601 [0.5]	Research for Design	SOCI 2450 [0.5]	Crime and Society
INDG 3001 [0.5]	Indigenous Governance	SOCI 2702 [0.5]	Power and Social Change
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	SOCI 2705 [0.5]	Popular Culture in the Digital Age
LAWS 2105 [0.5]	Social Justice and Human Rights	SOCI 3010 [0.5]	Power, Oppression and Resistance
LAWS 3307 [0.5]	Youth and Criminal Law	SOCI 3019 [0.5]	Sociology of International Migration
LAWS 3503 [0.5]	Equality and Discrimination	SOCI 3020 [0.5]	Studies in Race and Ethnicity
LAWS 3504 [0.5]	Law and Aboriginal Peoples	SOCI 3030 [0.5]	Studies in Work, Industry and Occupations: Authority and Expertise
LAWS 3800 [0.5]	Law of Environmental Quality	SOCI 3038 [0.5]	Studies in Urban Sociology
LAWS 4001 [0.5]	Law, Family and Gender	SOCI 3040 [0.5]	Studies in the Sociology of Gender
LAWS 4305 [0.5]	Criminal Justice Reform	SOCI 3044 [0.5]	Sociology of Sex and Sexuality
LAWS 4311 [0.5]	Human Rights in Canadian Prisons	SOCI 3050 [0.5]	Studies in the Sociology of Health
LAWS 4503 [0.5]	Law, Disability and Society	SOCI 3055 [0.5]	Studies in Addictions
LAWS 4504 [0.5]	Indigenous Criminal Justice	SOCI 3056 [0.5]	Women and Health
LAWS 4603 [0.5]	Transitional Justice	SOCI 3060 [0.5]	Critical Disability Studies
LAWS 4607 [0.5]	Immigration and Refugee Law	SOCI 3170 [0.5]	Social Justice in Action
LAWS 4800 [0.5]	Environment and Social Justice	SOCI 3300 [0.5]	Studies in the Sociology of Education
MUSI 2008 [0.5]	Music of the World's Peoples	SOCI 3430 [0.5]	Studies in Collective Action and Social Movements
MUSI 3103 [0.5]	Music in Canada	SOCI 3480 [0.5]	Law and Social Regulation
MUSI 3302 [0.5]	Music and Gender I	SOCI 4040 [0.5]	Feminist Sociology of Intersectionality
MUSI 4102 [0.5]	Ethnomusicology in Theory and Practice	SOCI 4730 [0.5]	Colonialism and Post-Colonialism
MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada	SOWK 2005 [0.5]	Values and Ethics for Social Work
MUSI 4104 [0.5]	First Peoples Music in Canada	SOWK 2203 [0.5]	Introduction to Social Work Practice with Groups and Communities
MUSI 4303 [0.5]	Music and Gender II	SOWK 3207 [0.5]	Human Rights Practice in Civil Society
MUSI 4306 [0.5]	Music and Wellbeing in a Global Context	SOWK 4000 [0.5]	Social Work and Indigenous Peoples
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues	SOWK 4003 [0.5]	Advanced Social Work Practice with Communities
PHIL 2103 [0.5]	Philosophy of Human Rights	SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
PHIL 2306 [0.5]	Philosophy and Feminism	SXST 2102 [0.5]	Sexuality, Gender, and Security
PHIL 2307 [0.5]	Gender and Philosophy	SXST 4104 [0.5]	Sexuality and Political Economy
PHIL 2380 [0.5]	Introduction to Environmental Ethics	TSES 3001 [0.5]	Technology-Society Interactions
PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy	TSES 4006 [0.5]	Technology and Society: Work
PHIL 3350 [0.5]	Philosophy, Ethics, and Public Affairs	WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
PHIL 3360 [0.5]	Philosophy, Economics, and Public Policy		
PHIL 3380 [0.5]	Environments, Technology and Values		
			5. The remaining requirements of the major discipline(s) and degree must be satisfied.
		Total Credits	4.0

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Computer Science

This section presents the requirements for programs in:

- Computer Science B.C.S. Honours
- Computer Science Industrial Applications Internship Option B.C.S. Honours
- Computer Science Algorithms Stream B.C.S. Honours
- Computer Science Artificial Intelligence and Machine Learning Stream B.C.S. Honours
- Computer Science Management and Business Systems Stream B.C.S. Honours
- Computer Science Software Engineering Stream B.C.S. Honours
- Computer Science Computer and Internet Security Stream B.C.S. Honours
- Computer Science Computer Game Development Stream B.C.S. Honours
- Computer Science B.C.S. Major
- Computer Science and Mathematics: Concentration in Computing Theory and Numerical Methods B. Math. Combined Honours
- Computer Science and Mathematics: Concentration in Statistics and Computing B. Math. Combined Honours
- Minor in Computer Science

Program Requirements

Course Categories

The following categories of courses are used in defining the program requirements in Computer Science.

Computer Science (COMP)

In addition to the courses with subject code COMP, the following courses offered by the Faculty of Engineering and Design are relevant to the B.C.S. program and the Combined Honours programs. These courses are counted as Computer Science credits in B.C.S., Minor in Computer Science, and Combined Honours program requirements:

SYSC 3303 [0.5]	Real-Time Concurrent Systems
SYSC 4005 [0.5]	Discrete Simulation/Modeling
SYSC 4106 [0.5]	The Software Economy and Project Management
SYSC 4507 [0.5]	Computer Systems Architecture

Breadth Electives

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, the Sprott School of Business and the Faculty of Science except for courses in COMP, MATH, STAT and the Prohibited Courses category.

Natural Science Electives

This category is defined with the B.Math. programs. See the Course Categories section on the Mathematics Program page of this Calendar for details.

Prohibited Courses

The following courses cannot be used for credit in the B.C.S., the Computer Science Minor, or any Combined Computer Science program:

BUSI 2402 [0.5]	Business Applications Development
BUSI 3400 [0.5]	Database Design
CGSC 1005 [0.5]	Computational Methods in Cognitive Science
COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
ECON 1401/ MATH 1401 [0.5]	Elementary Mathematics for Economics I
ECON 1402/ MATH 1402 [0.5]	Elementary Mathematics for Economics II
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business

all 0000-level MATH courses

and all courses in BIT, IMD, IRM, MPAD, NET, OSS, PLT and ITEC except for the following: BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, BIT 2000, BIT 2004, BIT 2005, BIT 2007, BIT 2100, BIT 2300.

Bachelor of Computer Science Honours Bachelor of Computer Science Honours Streams

B.C.S. Honours students may either register in the B.C.S. Honours degree below, or in one of the B.C.S. Honours streams that follow.

Computer Science

B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 6.5 credits in:	6.5
COMP 1405 [0.5]	Introduction to Computer Science I
COMP 1406 [0.5]	Introduction to Computer Science II
COMP 1805 [0.5]	Discrete Structures I
COMP 2401 [0.5]	Introduction to Systems Programming
COMP 2402 [0.5]	Abstract Data Types and Algorithms
COMP 2404 [0.5]	Introduction to Software Engineering
COMP 2406 [0.5]	Fundamentals of Web Applications
COMP 2804 [0.5]	Discrete Structures II
COMP 3000 [0.5]	Operating Systems
COMP 3004 [0.5]	Object-Oriented Software Engineering
COMP 3005 [0.5]	Database Management Systems
COMP 3007 [0.5]	Programming Paradigms
COMP 3804 [0.5]	Design and Analysis of Algorithms I
2. 0.5 credit in COMP at the 2000-level or above	0.5
3. 2.0 credits in:	2.0

COMP 4905 [0.5] and 1.5 credits in COMP at the 4000-level, or	
COMP 4906 [1.0] and 1.0 credit in COMP at the 4000-level, or	
2.0 credits in COMP at the 4000-level	
B. Credits Not Included in the Major CGPA (11.0 credits)	
4. 1.5 credits from:	1.5
MATH 1007 [0.5] Elementary Calculus I	
MATH 1104 [0.5] Linear Algebra for Engineering or Science	
0.5 credit in MATH at the 2000-level or above	
5. 0.5 credit in:	0.5
STAT 2507 [0.5] Introduction to Statistical Modeling I	
6. 5.0 credits in Breadth Electives	5.0
7. 4.0 credits in free electives.	4.0
Total Credits	20.0

Computer Science

Industrial Applications Internship Option

B.C.S. Honours (20.0 credits)

Registration in the internship option is by permission of the School only

A. Credits Included in the Major CGPA (13.0 credits)

1. 10.5 credits in:	10.5
COMP 1405 [0.5] Introduction to Computer Science I	
COMP 1406 [0.5] Introduction to Computer Science II	
COMP 1805 [0.5] Discrete Structures I	
COMP 1910 [0.5] Internship	
COMP 1911 [0.5] Internship	
COMP 2401 [0.5] Introduction to Systems Programming	
COMP 2402 [0.5] Abstract Data Types and Algorithms	
COMP 2404 [0.5] Introduction to Software Engineering	
COMP 2406 [0.5] Fundamentals of Web Applications	
COMP 2804 [0.5] Discrete Structures II	
COMP 2910 [0.5] Internship	
COMP 2911 [0.5] Internship	
COMP 3000 [0.5] Operating Systems	
COMP 3004 [0.5] Object-Oriented Software Engineering	
COMP 3005 [0.5] Database Management Systems	
COMP 3007 [0.5] Programming Paradigms	
COMP 3804 [0.5] Design and Analysis of Algorithms I	
COMP 3910 [0.5] Internship	
COMP 3911 [0.5] Internship	
COMP 4910 [0.5] Internship	
COMP 4911 [0.5] Internship	
2. 0.5 credit in COMP at the 2000-level or above	0.5
3. 2.0 credits in:	2.0
COMP 4905 [0.5] and 1.5 credits in COMP at the 4000-level, or	
COMP 4906 [1.0] and 1.0 credit in COMP at the 4000-level, or	
2.0 credits in COMP at the 4000-level	

B. Credits Not Included in the Major CGPA (7.0 credits)

4. 1.5 credits from:	1.5
MATH 1007 [0.5] Elementary Calculus I	
MATH 1104 [0.5] Linear Algebra for Engineering or Science	
0.5 credit in MATH at the 2000-level or above	
5. 0.5 credit in:	0.5
STAT 2507 [0.5] Introduction to Statistical Modeling I	
6. 5.0 credits in Breadth Electives	5.0
Total Credits	20.0

Computer Science

Algorithms Stream

B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 6.5 credits in:	6.5
COMP 1405 [0.5] Introduction to Computer Science I	
COMP 1406 [0.5] Introduction to Computer Science II	
COMP 1805 [0.5] Discrete Structures I	
COMP 2401 [0.5] Introduction to Systems Programming	
COMP 2402 [0.5] Abstract Data Types and Algorithms	
COMP 2404 [0.5] Introduction to Software Engineering	
COMP 2406 [0.5] Fundamentals of Web Applications	
COMP 2804 [0.5] Discrete Structures II	
COMP 3000 [0.5] Operating Systems	
COMP 3004 [0.5] Object-Oriented Software Engineering	
COMP 3005 [0.5] Database Management Systems	
COMP 3007 [0.5] Programming Paradigms	
COMP 3804 [0.5] Design and Analysis of Algorithms I	
2. 1.5 credits in:	1.5
COMP 3801 [0.5] Algorithms for Modern Data Sets	
COMP 3803 [0.5] Introduction to Theory of Computation	
COMP 4804 [0.5] Design and Analysis of Algorithms II	
3. 0.5 credit in:	0.5
COMP 4001 [0.5] Distributed Computing	
4. 1.5 credits in:	1.5
COMP 4905 [0.5] and 1.0 credit in COMP at the 4000-level, or	
COMP 4906 [1.0] and 0.5 credit in COMP at the 4000-level, or	
1.5 credits in COMP at the 4000-level	
B. Credits Not Included in the Major CGPA (10.0 credits)	
5. 1.5 credits from:	1.5
MATH 1007 [0.5] Elementary Calculus I	
MATH 1104 [0.5] Linear Algebra for Engineering or Science	
0.5 credit in MATH at the 2000-level or above	
6. 0.5 credit in:	0.5
STAT 2507 [0.5] Introduction to Statistical Modeling I	
7. 5.0 credits in Breadth Electives	5.0
8. 3.0 credits in free electives	3.0
Total Credits	20.0

Computer Science Artificial Intelligence and Machine Learning Stream

B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.5 credits)

1. 6.5 credits in: 6.5

COMP 1405 [0.5]	Introduction to Computer Science I
COMP 1406 [0.5]	Introduction to Computer Science II
COMP 1805 [0.5]	Discrete Structures I
COMP 2401 [0.5]	Introduction to Systems Programming
COMP 2402 [0.5]	Abstract Data Types and Algorithms
COMP 2404 [0.5]	Introduction to Software Engineering
COMP 2406 [0.5]	Fundamentals of Web Applications
COMP 2804 [0.5]	Discrete Structures II
COMP 3000 [0.5]	Operating Systems
COMP 3004 [0.5]	Object-Oriented Software Engineering
COMP 3005 [0.5]	Database Management Systems
COMP 3007 [0.5]	Programming Paradigms
COMP 3804 [0.5]	Design and Analysis of Algorithms I

2. 1.5 credits in: 1.5

COMP 3105 [0.5]	Introduction to Machine Learning
COMP 3106 [0.5]	Introduction to Artificial Intelligence
COMP 4107 [0.5]	Neural Networks

3. 1.5 credits from: 1.5

COMP 4905 [0.5] and 1.0 credit in COMP at the 4000-level, or
COMP 4906 [1.0] and 0.5 credit in COMP at the 4000-level, or
1.5 credits in COMP at the 4000-level

B. Credits Not Included in the Major CGPA (10.5 credits)

4. 1.0 credit in: 1.0

MATH 1007 [0.5]	Elementary Calculus I
MATH 1104 [0.5]	Linear Algebra for Engineering or Science

5. 0.5 credit from: 0.5

STAT 2605 [0.5]	Probability Models
or 0.5 credit in MATH at the 2000-level or above	

6. 0.5 credit in: 0.5

STAT 2507 [0.5]	Introduction to Statistical Modeling I
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7. 5.0 credits in Breadth Electives 5.0

8. 3.5 credits in free electives 3.5

Total Credits **20.0**

Computer Science Management and Business Systems Stream B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 6.5 credits in: 6.5

COMP 1405 [0.5]	Introduction to Computer Science I
COMP 1406 [0.5]	Introduction to Computer Science II
COMP 1805 [0.5]	Discrete Structures I
COMP 2401 [0.5]	Introduction to Systems Programming

COMP 2402 [0.5] Abstract Data Types and Algorithms

COMP 2404 [0.5] Introduction to Software Engineering

COMP 2406 [0.5] Fundamentals of Web Applications

COMP 2804 [0.5] Discrete Structures II

COMP 3000 [0.5] Operating Systems

COMP 3004 [0.5] Object-Oriented Software Engineering

COMP 3005 [0.5] Database Management Systems

COMP 3007 [0.5] Programming Paradigms

COMP 3804 [0.5] Design and Analysis of Algorithms I

2. 0.5 credit in COMP at the 2000-level or above 0.5

3. 2.0 credits in: 2.0

COMP 4905 [0.5] and 1.5 credits in COMP at the 4000-level, or

COMP 4906 [1.0] and 1.0 credit in COMP at the 4000-level, or

2.0 credits in COMP at the 4000-level

B. Credits Not Included in the Major CGPA (11.0 credits)

4. 1.5 credits from: 1.5

MATH 1007 [0.5] Elementary Calculus I

MATH 1104 [0.5] Linear Algebra for Engineering or Science

0.5 credit in MATH at the 2000-level or above

5. 0.5 credit in: 0.5

STAT 2507 [0.5] Introduction to Statistical Modeling I

6. 1.0 credit from: 1.0

BUSI 1003 and 0.5 credit in BUSI at the 2000-level, or

BUSI 1001 [0.5] Principles of Financial Accounting & BUSI 1002 [0.5] Management Accounting

7. 2.0 credits in: 2.0

BUSI 2121 [0.5] Introduction to Organizational Behaviour

BUSI 2301 [0.5] Introduction to Supply and Operations Management

BUSI 2503 [0.5] Introduction to Finance

BUSI 3402 [0.5] Systems Analysis and Design

8. 1.0 credit in: 1.0

ECON 1001 [0.5] Introduction to Microeconomics

ECON 1002 [0.5] Introduction to Macroeconomics

9. 1.5 credit in BUSI at the 3000-level or above 1.5

10. 3.5 credits in free electives. 3.5

Total Credits **20.0**

Computer Science Software Engineering Stream B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.5 credits)

1. 6.5 credits in: 6.5

COMP 1405 [0.5] Introduction to Computer Science I

COMP 1406 [0.5] Introduction to Computer Science II

COMP 1805 [0.5] Discrete Structures I

COMP 2401 [0.5] Introduction to Systems Programming

COMP 2402 [0.5] Abstract Data Types and Algorithms

COMP 2404 [0.5]	Introduction to Software Engineering	
COMP 2406 [0.5]	Fundamentals of Web Applications	
COMP 2804 [0.5]	Discrete Structures II	
COMP 3000 [0.5]	Operating Systems	
COMP 3004 [0.5]	Object-Oriented Software Engineering	
COMP 3005 [0.5]	Database Management Systems	
COMP 3007 [0.5]	Programming Paradigms	
COMP 3804 [0.5]	Design and Analysis of Algorithms I	
2. 0.5 credit in:		0.5
COMP 3008 [0.5]	Human-Computer Interaction	
3. 1.5 credits in:		1.5
COMP 4004 [0.5]	Software Quality Assurance	
SYSC 3303 [0.5]	Real-Time Concurrent Systems	
SYSC 4106 [0.5]	The Software Economy and Project Management	
4. 1.0 credit from:		1.0
COMP 4905 [0.5]	and 0.5 credit in COMP at the 4000-level, or	
COMP 4906 [1.0]	Honours Thesis	
or		
1.0 credit in COMP at the 4000-level		
B. Credits Not Included in the Major CGPA (10.5 credits)		
5. 1.5 credits from:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
0.5 credit in MATH at the 2000-level or above		
6. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
7. 5.0 credits in Breadth Electives		5.0
8. 3.5 credits in free electives.		3.5
Total Credits		20.0

Computer Science Computer and Internet Security Stream B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.5 credits)

1. 6.5 credits in:		6.5
COMP 1405 [0.5]	Introduction to Computer Science I	
COMP 1406 [0.5]	Introduction to Computer Science II	
COMP 1805 [0.5]	Discrete Structures I	
COMP 2401 [0.5]	Introduction to Systems Programming	
COMP 2402 [0.5]	Abstract Data Types and Algorithms	
COMP 2404 [0.5]	Introduction to Software Engineering	
COMP 2406 [0.5]	Fundamentals of Web Applications	
COMP 2804 [0.5]	Discrete Structures II	
COMP 3000 [0.5]	Operating Systems	
COMP 3004 [0.5]	Object-Oriented Software Engineering	
COMP 3005 [0.5]	Database Management Systems	
COMP 3007 [0.5]	Programming Paradigms	
COMP 3804 [0.5]	Design and Analysis of Algorithms I	

2. 2.0 credits in:		2.0
COMP 3008 [0.5]	Human-Computer Interaction	
COMP 3109 [0.5]	Applied Cryptography and Authentication	
COMP 3203 [0.5]	Principles of Computer Networks	
COMP 4108 [0.5]	Computer Systems Security	
3. 1.0 credit from:		1.0
COMP 4905 [0.5]	and 0.5 credit in COMP at the 4000-level, or	
COMP 4906 [1.0]	Honours Thesis	
or		
1.0 credit in COMP at the 4000-level		
B. Credits Not Included in the Major CGPA (10.5 credits)		
4. 1.5 credits from:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
0.5 credit in MATH at the 2000-level or above		
5. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
6. 5.0 credits in Breadth Electives		5.0
7. 3.5 credits in free electives		3.5
Total Credits		20.0

Computer Science Computer Game Development Stream B.C.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 6.5 credits in:		6.5
COMP 1405 [0.5]	Introduction to Computer Science I	
COMP 1406 [0.5]	Introduction to Computer Science II	
COMP 1805 [0.5]	Discrete Structures I	
COMP 2401 [0.5]	Introduction to Systems Programming	
COMP 2402 [0.5]	Abstract Data Types and Algorithms	
COMP 2404 [0.5]	Introduction to Software Engineering	
COMP 2406 [0.5]	Fundamentals of Web Applications	
COMP 2804 [0.5]	Discrete Structures II	
COMP 3000 [0.5]	Operating Systems	
COMP 3004 [0.5]	Object-Oriented Software Engineering	
COMP 3005 [0.5]	Database Management Systems	
COMP 3007 [0.5]	Programming Paradigms	
COMP 3804 [0.5]	Design and Analysis of Algorithms I	
2. 2.0 credits in:		2.0
COMP 1501 [0.5]	Introduction to Computer Game Design	
COMP 2501 [0.5]	Computer Game Design and Development	
COMP 3501 [0.5]	Foundations of Game Programming and Computer Graphics	
COMP 4501 [0.5]	Advanced Facilities for Real-Time Games	
3. 1.5 credits in:		1.5

COMP 4905 [0.5] and 1.0 credit in COMP at the 4000-level, or

COMP 4906 [1.0] and 0.5 credit in COMP at the 4000-level, or

1.5 credits in COMP at the 4000-level

B. Credits Not Included in the Major CGPA (10.0 credits)

4. 1.5 credits from: 1.5

MATH 1007 [0.5] Elementary Calculus I

MATH 1104 [0.5] Linear Algebra for Engineering or Science

0.5 credit in MATH at the 2000-level or above

5. 0.5 credit in: 0.5

STAT 2507 [0.5] Introduction to Statistical Modeling I

6. 5.0 credits in Breadth electives 5.0

7. 3.0 credits in free electives 3.0

Total Credits 20.0

Computer Science

B.C.S. Major (20.0 credits)

A. Credits Included in the Major CGPA (7.5 credits)

1. 6.0 credits in: 6.0

COMP 1405 [0.5] Introduction to Computer Science I

COMP 1406 [0.5] Introduction to Computer Science II

COMP 1805 [0.5] Discrete Structures I

COMP 2401 [0.5] Introduction to Systems Programming

COMP 2402 [0.5] Abstract Data Types and Algorithms

COMP 2404 [0.5] Introduction to Software Engineering

COMP 2406 [0.5] Fundamentals of Web Applications

COMP 2804 [0.5] Discrete Structures II

COMP 3000 [0.5] Operating Systems

COMP 3004 [0.5] Object-Oriented Software Engineering

COMP 3005 [0.5] Database Management Systems

COMP 3007 [0.5] Programming Paradigms

2. 1.0 credit in COMP at the 3000-level or above 1.0

3. 0.5 credit in COMP at the 4000-level 0.5

B. Credits Not Included in the Major CGPA (12.5 credits)

4. 1.0 credit in: 1.0

MATH 1007 [0.5] Elementary Calculus I

MATH 1104 [0.5] Linear Algebra for Engineering or Science

5. 0.5 credit in: 0.5

STAT 2507 [0.5] Introduction to Statistical Modeling I

6. 5.0 credits in Breadth Electives 5.0

7. 6.0 credits in free electives. 6.0

Total Credits 20.0

Computer Science and Mathematics

B.Math. Combined Honours

Students must register in one of the two concentrations below, each of which adds 5.0 credits to the Major CGPA.

**Computer Science and Mathematics:
Concentration in Computing Theory and
Numerical Methods**

B. Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (16.0 credits)

1. 4.5 credits in: 4.5

MATH 1052 [0.5] Calculus and Introductory Analysis I

MATH 1152 [0.5] Introductory Algebra I

MATH 1800 [0.5] Introduction to Mathematical Reasoning

MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis

MATH 2052 [0.5] Calculus and Introductory Analysis II

MATH 2100 [1.0] Algebra

MATH 2152 [0.5] Introductory Algebra II

2. 6.0 credits in: 6.0

COMP 1405 [0.5] Introduction to Computer Science I

COMP 1406 [0.5] Introduction to Computer Science II

COMP 2401 [0.5] Introduction to Systems Programming

COMP 2402 [0.5] Abstract Data Types and Algorithms

COMP 2404 [0.5] Introduction to Software Engineering

COMP 2406 [0.5] Fundamentals of Web Applications

COMP 2804 [0.5] Discrete Structures II

COMP 3000 [0.5] Operating Systems

COMP 3004 [0.5] Object-Oriented Software Engineering

COMP 3005 [0.5] Database Management Systems

COMP 3804 [0.5] Design and Analysis of Algorithms I

COMP 3805 [0.5] Discrete Structures and Applications (Honours)

3. 0.5 credit from: 0.5

COMP 4905 [0.5] Honours Project

MATH 4905 [0.5] Honours Project (Honours)

Concentration in Computing Theory and Numerical Methods

4. 3.0 credits from: 3.0

MATH 2454 [0.5] Ordinary Differential Equations (Honours)

STAT 2559 [0.5] Basics of Statistical Modeling (Honours)

STAT 2655 [0.5] Introduction to Probability with Applications (Honours)

MATH 3801 [0.5] Linear Programming

MATH 3806 [0.5] Numerical Analysis (Honours)

COMP 4804 [0.5] Design and Analysis of Algorithms II

5. 0.5 credit from: 0.5

MATH 3001 [0.5] Real Analysis I (Honours)

MATH 3002 [0.5] Real Analysis II (Honours)

MATH 3003 [0.5] Advanced Differential Calculus (Honours)

MATH 3057 [0.5] Functions of a Complex Variable (Honours)

MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
6. 1.0 credit from:		1.0
MATH 4109 [0.5]	Fields and Coding Theory (Honours)	
MATH 4801 [0.5]	Topics in Combinatorics (Honours)	
MATH 4802 [0.5]	Introduction to Mathematical Logic (Honours)	
MATH 4803 [0.5]	Computable Functions (Honours)	
MATH 4805 [0.5]	Theory of Automata (Honours)	
MATH 4806 [0.5]	Numerical Linear Algebra (Honours)	
MATH 4807 [0.5]	Game Theory (Honours)	
MATH 4808 [0.5]	Graph Theory and Algorithms (Honours)	
MATH 4811 [0.5]	Combinatorial Design Theory (Honours)	
MATH 4816 [0.5]	Numerical Analysis for Differential Equations (Honours)	
MATH 4821 [0.5]	Quantum Computing (Honours)	
MATH 4822 [0.5]	Wavelets and Digital Signal Processing (Honours)	
7. 0.5 credit in COMP at the 3000 level or above.		0.5
B. Credits Not Included in the Major CGPA (4.0 credits)		
8. 4.0 credits not in MATH, STAT, or COMP consisting of:		4.0
a. 1.0 credit in Natural Science electives		
b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives		
Total Credits		20.0

Note:

The following courses offered by the School of Business and the Faculty of Engineering are treated as Computer Science courses in this program:

Business

BUSI 2400 [0.5]	Foundations of Information Systems
BUSI 4400 [0.5]	IS Management and Strategy
BUSI 4406 [0.5]	Business Analytics

Engineering

SYSC 3303 [0.5]	Real-Time Concurrent Systems
SYSC 4005 [0.5]	Discrete Simulation/Modeling
SYSC 4507 [0.5]	Computer Systems Architecture

**Computer Science and Mathematics:
Concentration in Statistics and Computing
B. Math. Combined Honours (20.0 credits)**

A. Credits Included in the Major CGPA (16.5 credits)

1. 5.0 credits in:		5.0
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2100 [1.0]	Algebra	
MATH 2152 [0.5]	Introductory Algebra II	

STAT 1500 [0.5]	Introduction to Statistical Computing	
2. 6.0 credits in:		6.0
COMP 1405 [0.5]	Introduction to Computer Science I	
COMP 1406 [0.5]	Introduction to Computer Science II	
COMP 2401 [0.5]	Introduction to Systems Programming	
COMP 2402 [0.5]	Abstract Data Types and Algorithms	
COMP 2404 [0.5]	Introduction to Software Engineering	
COMP 2406 [0.5]	Fundamentals of Web Applications	
COMP 2804 [0.5]	Discrete Structures II	
COMP 3000 [0.5]	Operating Systems	
COMP 3004 [0.5]	Object-Oriented Software Engineering	
COMP 3005 [0.5]	Database Management Systems	
COMP 3804 [0.5]	Design and Analysis of Algorithms I	
COMP 3805 [0.5]	Discrete Structures and Applications (Honours)	
3. 0.5 credit from:		0.5
COMP 4905 [0.5]	Honours Project	
STAT 4905 [0.5]	Honours Project (Honours)	

Concentration in Statistics and Computing:

4. 3.0 credits in:		3.0
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3806 [0.5]	Numerical Analysis (Honours)	
STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
STAT 3558 [0.5]	Elements of Probability Theory (Honours)	
STAT 3559 [0.5]	Mathematical Statistics (Honours)	
5. 0.5 credit from:		0.5
STAT 3506 [0.5]	Stochastic Processes and Applications (Honours)	
STAT 3553 [0.5]	Regression Modeling (Honours)	
6. 1.0 credit in STAT at the 4000 level		1.0
7. 0.5 credit in COMP at the 4000 level		0.5
B. Credits Not Included in the Major CGPA (3.5 credits)		
8. 3.5 credits not in MATH, STAT, or COMP consisting of:		3.5
a. 1.0 credit in Natural Science electives		
b. 2.5 credits from Natural Science, or Approved Arts and Social Sciences electives		
Total Credits		20.0

Minor in Computer Science (4.0 credits)

Only students pursuing an undergraduate program requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degree with a minimum Overall CGPA of 7.0 may be admitted to the Minor in Computer Science, except for the following:

- Bioinformatics B.Sc. Honours
- Cognitive Science with Concentration in Cognition and Computation Bachelor of Cognitive Science Honours
- Computational Biochemistry B.Sc. Honours

- Computer Science B.C.S. Honours, including all streams
- Computer Science and Mathematics: Concentration in Computing Theory and Numerical Methods B.Math. Combined Honours
- Computer Science and Mathematics: Concentration in Statistics and Computing B.Math. Combined Honours
- Computer Systems Engineering Bachelor of Engineering
- Economics B.Econ. Honours with Concentration in Computational Analysis
- Information Resource Management B.I.T.
- Interactive Multimedia and Design B.I.T.
- Linguistics with a Concentration in Linguistic Theory (Computer Science) B.Sc. Honours
- Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science) B.Sc. Honours
- Network Technology B.I.T.
- Optical Systems and Sensors B.I.T.
- Software Engineering Bachelor of Engineering

Enrolment is limited. Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Requirements

1. 2.5 credits in:	2.5
COMP 1005 [0.5] Introduction to Computer Science I	
COMP 1006 [0.5] Introduction to Computer Science II	
COMP 2401 [0.5] Introduction to Systems Programming	
COMP 2402 [0.5] Abstract Data Types and Algorithms	
COMP 2404 [0.5] Introduction to Software Engineering	
2. 1.0 credit from:	1.0
COMP 1805 [0.5] Discrete Structures I (and/or COMP at the 2000-level or above)	
3. 0.5 credit in COMP at the 3000-level or above	0.5
4. Course equivalencies and transfer credits can be used for at most 2.0 credits of the minor; the remaining 2.0 credits must be courses listed in the COMP section of this Calendar	
5. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Regulations

In addition to the program requirements described here, students must satisfy the University regulations common to all undergraduate students (see the *Academic Regulations of the University* section of this Calendar).

Students should consult with the School when planning their program and selecting courses.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The

summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Computer Science Honours and Major: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. A major CGPA of 8.00 or higher and an overall CGPA of 8.00 or higher;

- Successfully completed 3.0 required credits in Computer Science, including one of COMP 2402 or COMP 2404;
- Registered as a full-time student in the Bachelor of Computer Science program (2.0 credits).

Bachelor of Computer Science Honours and Major students must successfully complete four (4) work terms to obtain the Co-op designation.

Co-op Work Term Course: COMP 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer	**O	Summer	W	Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite

averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Computer Science (B.C.S.) (Honours)
- Bachelor of Computer Science (B.C.S.) (Major)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent, including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Students must typically present a minimum CGPA of 7.00 (B-) in order to be considered for admission. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected. Students will not receive credit for courses graded below C-.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

- meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
- be registered as a full-time student in the Bachelor of Computer Science Honours program;
- be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Computer Science (COMP) Courses

Notes:

- Some of the following Computer Science courses are cross-listed from other parts of the Calendar. In every such case, only one course is actually offered and the two numbers are alternate identifiers for this single course. Students in the B.C.S. program should register in such a course under the Computer Science (COMP) number.

COMP 0999 [0.0 credit]

COMP Matters

COMP 1001 [0.5 credit]**Introduction to Computational Thinking for Arts and Social Science Students**

An introduction to computational thinking and its applications to the arts and social sciences. Students will gain computational thinking skills by exploring data representation, basic programming concepts, a selection of algorithms, and advanced usage of software packages for the arts and social sciences.

Precludes additional credit for COMP 1004 (no longer offered). This course cannot be taken for credit by students in Business, Engineering, Computer Science, Mathematics or Science.

Lectures three hours a week.

COMP 1005 [0.5 credit]**Introduction to Computer Science I**

Introduction to computer science and programming. Topics include: algorithm design; control structures; variables and types; linear collections; functions; debugging and testing. Special attention is given to procedural programming in a modern language, computational thinking skills, and problem decomposition.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, CGSC 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1006 [0.5 credit]**Introduction to Computer Science II**

A second course in programming emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2400, BUSI 2402, COMP 1406, ITEC 2400, ITEC 2401, SYSC 2004.

Prerequisite(s): COMP 1005 or COMP 1405.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1008 [0.5 credit]**Math for Game Programmers**

Math for building 3D games. Points, vectors, normals. Dot and cross products. Transformations and inverses in left- and right-handed systems. Uses for controlling objects, cameras, and texture manipulation. Bounding boxes, planes, frustums for collision detection and visibility, fast billboard techniques, point and sphere sweeping. Quaternions.

Prerequisite(s): one Grade 12 university preparation mathematics course.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1405 [0.5 credit]**Introduction to Computer Science I**

Introduction to computer science and programming, for computer science students. Topics include: algorithm design; control structures; variables and types; linear collections; functions; debugging and testing. Special attention is given to procedural programming in a modern language, computational thinking skills, and problem decomposition.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, CGSC 1005, COMP 1005, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.

Prerequisite(s): restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1406 [0.5 credit]**Introduction to Computer Science II**

A second course in programming for BCS students, emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.

Precludes additional credit for BIT 2400, BUSI 2402, COMP 1006, ITEC 2400, ITEC 2401, SYSC 2004.

Prerequisite(s): COMP 1005 or COMP 1405. Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics. Lectures three hours a week, tutorial one and a half hours a week.

COMP 1501 [0.5 credit]**Introduction to Computer Game Design**

Introduction to game design and prototyping. Topics include: formal theories of fun; the mechanics-dynamics-aesthetics framework; game economies; game balance; statistical tools for analyzing game mechanics; game settings; and storytelling. Special attention is given to the attributes of games and what makes a game fun.

Prerequisite(s): COMP 1005 or COMP 1405.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1601 [0.5 credit]**Introduction to Mobile Application Development**

Introduction to developing mobile applications using the Mac OS X platform. Topics include: the Objective-C programming language; development tools; framework API's; and the Quartz graphic system. Extensive practical experience with development for Apple mobile devices such as the iPhone.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1005 or COMP 1405.

Lecture/lab four hours a week.

COMP 1805 [0.5 credit]**Discrete Structures I**

Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing.

Includes: Experiential Learning Activity

Precludes additional credit for MATH 1800.

Prerequisite(s): one Grade 12 university preparation mathematics course.

Lectures three hours a week, tutorial one hour a week.

COMP 1910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. This course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): Permission of the School and registration in internship option.

COMP 1911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the BCS.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1910 and registration in internship option.

COMP 2109 [0.5 credit]**Introduction to Security and Privacy**

A tour of Internet security and privacy. Societal impacts and case studies. Topics from: protection goals of stakeholders; history of public key cryptography; programming languages and security; security engineering and testing; cybercrime and malware; Internet privacy and anonymity; government surveillance; regulation; ethics; blockchain applications.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1406 with a minimum grade of C-, and COMP 2401 with a minimum grade of C-.

Lectures three hours a week.

COMP 2401 [0.5 credit]**Introduction to Systems Programming**

Introduction to system-level programming with fundamental OS concepts, procedures, primitive data types, user-defined types. Topics may include process management, memory management, process coordination and synchronization, inter-process communication, file systems, networking, pointers, heap and stack memory management, and system/library calls.

Precludes additional credit for SYSC 2006.

Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 2402 [0.5 credit]**Abstract Data Types and Algorithms**

Introduction to the design and implementation of abstract data types and to complexity analysis of data structures.

Topics include: stacks, queues, lists, trees and graphs.

Special attention is given to abstraction, interface specification and hierarchical design using an object-oriented programming language.

Precludes additional credit for SYSC 2100.

Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.

Lectures three hours a week.

COMP 2404 [0.5 credit]**Introduction to Software Engineering**

Introduction to object-oriented software development, with emphasis on the design and implementation of maintainable, reusable software. Topics include abstraction, modularity, encapsulation, and an introduction to design patterns.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3010, SYSC 3110.

Prerequisite(s): COMP 2401 with a minimum grade of C-.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 2406 [0.5 credit]**Fundamentals of Web Applications**

Introduction to Internet application development; emphasis on computer science fundamentals of technologies underlying web applications. Topics include: scripting and functional languages, language-based virtual machines, database query languages, remote procedure calls over the Internet, and performance and security concerns in modern distributed applications.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4504.

Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.

Lectures three hours a week and tutorial one and a half hours a week.

COMP 2501 [0.5 credit]**Computer Game Design and Development**

Introduction to the practical development of computer games and engine architecture. Topics include: vector and matrix operations; coordinate systems and transformations; physical simulation; collision detection; AI; path planning; hardware-accelerated real-time rendering. Special attention is given to implementation of real-time rendering in a low-level language.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1501, COMP 2401 with a minimum grade of C-, and MATH 1104.
Lectures three hours a week, tutorial one and a half hours a week.

COMP 2601 [0.5 credit]**Mobile Applications**

Development of applications for mobile environments taking advantage of gesture-based input and using location and presence services. Topics include introduction to low-level network services and mobile platforms, description of architectural patterns, principles of mobile development and interaction styles for network service usage.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1601.
Lecture/lab four hours a week.

COMP 2801 [0.5 credit]**Introduction to Robotics**

A course on programming simulated mobile robots with various sensors such as wheel encoders, distance sensors, cameras, compasses, accelerometers, and laser range finders. Topics include: programming robot behaviour; performing position estimation; implementing algorithms related to navigation, mapping, path planning, area coverage, and localization.
Includes: Experiential Learning Activity
Precludes additional credit for COMP 1807 (no longer offered).
Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.
Lab four hours a week.

COMP 2804 [0.5 credit]**Discrete Structures II**

A second course in discrete mathematics and discrete structures. Topics include: counting, sequences and sums, discrete probability, basic statistics, recurrence relations, randomized algorithms. Material is illustrated through examples from computing.
Prerequisite(s): COMP 1805 with a minimum grade of C-, or permission of the School of Computer Science for those in Combined Honours in Computer Science and Mathematics.
Lectures three hours a week.

COMP 2910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 1911 and registration in internship option.

COMP 2911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the BCS.
Includes: Experiential Learning Activity
Prerequisite(s): COMP 2910 and registration in internship option.

COMP 3000 [0.5 credit]**Operating Systems**

Operating system implementation course stressing fundamental issues in design and how they relate to modern computer architectures. Assignments involve the modification and extension of a multitasking operating system.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 4001.
Prerequisite(s): COMP 2401 with a minimum grade of C- and (COMP 2402 or SYSC 2100).
Lectures three hours a week, tutorial one and a half hours a week.

COMP 3002 [0.5 credit]**Compiler Construction**

The structure, organization and design of the phases of a compiler are considered: lexical translators, syntactical translators, scope handlers, type checkers, code generators and optimizers. Components of a compiler will be implemented.
Prerequisite(s): (COMP 2402 or SYSC 2100).
Lectures three hours a week.

COMP 3004 [0.5 credit]**Object-Oriented Software Engineering**

Development of object-oriented software systems: theory and practice. Topics include: Computer ethics, software development processes, requirement specification, class and scenario modeling, state modeling, UML, design patterns, traceability. Students are to complete a team project.
Includes: Experiential Learning Activity
Precludes additional credit for SYSC 3020, SYSC 3120, SYSC 4120.
Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2404 or SYSC 3010 or SYSC 3110) with a minimum grade of C-, and (COMP 2406 or SYSC 4504).
Lectures three hours a week.

COMP 3005 [0.5 credit]**Database Management Systems**

Introduces students to concepts of database management systems, database design and file structures. Topics include: entity-relationship modeling and object oriented database design, data models (relational, network and object oriented), the relational algebra, SQL, normalization theory, physical data organization, object oriented databases and OQL.

Precludes additional credit for BUSI 3400.

Prerequisite(s): COMP 1805 with a minimum grade of C-, and either COMP 2402 or (SYSC 2004 and SYSC 2100).

Lectures three hours a week.

COMP 3007 [0.5 credit]**Programming Paradigms**

An introduction to alternative programming paradigms such as functional, constraint-based, concurrent, and logic programming.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3101.

Prerequisite(s): COMP 1805 with a minimum grade of C-, and either COMP 2402 or (SYSC 2004 and SYSC 2100).

Lectures three hours a week.

COMP 3008 [0.5 credit]**Human-Computer Interaction**

Fundamentals of the underlying theories, design principles, development and evaluation practices of human-computer interaction (HCI). Topics may include: theories of interaction, user interface frameworks, desktop, web, mobile, and immersive applications, usability inspection and testing methods, and qualitative and quantitative approaches to HCI research.

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504).

Lectures three hours a week.

COMP 3009 [0.5 credit]**Computer Graphics**

An overview of computer graphics covering rendering, modeling, and animation. Topics include geometric primitives and modeling; image formation algorithms such as ray tracing and the Z-buffer; lighting, shading, and texture; and introduction to physics-based animation and character animation.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2402 or SYSC 2100), MATH 1007, and MATH 1104.

Lectures/lab four hours a week.

COMP 3105 [0.5 credit]**Introduction to Machine Learning**

An introduction to methods for automated learning of relationships on the basis of empirical data. Includes topics in supervised and unsupervised machine learning and deeper knowledge of several algorithms of each type and their applications. Evaluation and quantification of performance of ML systems.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4105 (no longer offered), SYSC 4415.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (2404 or SYSC 3010 or SYSC 3110) and COMP 2804 and (MATH 1104 or MATH 1107).

Lectures three hours a week.

COMP 3106 [0.5 credit]**Introduction to Artificial Intelligence**

Principles and tools used in Artificial Intelligence. Fundamentals of Knowledge Representation and Reinforcement Learning and Nature-Based computing. Methods for non-adversarial problem solving including non-exhaustive and heuristic-based strategies for searching the state space. Methods for adversarial problem solving, modeled as two-person and multi-person games.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4106 (no longer offered).

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.

Lectures three hours a week.

COMP 3109 [0.5 credit]**Applied Cryptography and Authentication**

Practical aspects of cryptography. Topics include: stream and block ciphers; modes of operation; hash functions; message and user authentication; authenticated key establishment protocols; random number generation; entropy; proof of knowledge; secret sharing; key distribution; pitfalls deploying public-key encryption and digital signatures.

Precludes additional credit for COMP 4109 (no longer offered).

Prerequisite(s): (COMP 2402 or SYSC 2100) and COMP 2804.

Lectures three hours a week.

COMP 3203 [0.5 credit]**Principles of Computer Networks**

This is an introductory course to the field of Network Computing. Topics include: Protocol Architectures and Internetworking, Types of Networks, Communication Protocols, End-System and Network Traffic Management, Structure of Routing and Congestion Control.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4602.

Prerequisite(s): COMP 2401 with a minimum grade of C-, and (COMP 2402 or SYSC 2100).

Lectures three hours a week.

COMP 3301 [0.5 credit]**Technical Writing for Computer Science**

Technical communication for computer science majors, concentrating on writing scientific papers and technical reports. Principles of clarity and precision in writing and communication. Practical exercises and readings from recent technical publications will be used.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110).

Lectures three hours a week.

COMP 3308 [0.5 credit]**Bioinformatics**

This practical interdisciplinary course will provide a broad overview of bioinformatics in which computer science and mathematics are applied to solve problems in molecular biology. Topics include gene prediction, sequence alignment, phylogeny, molecular interactions, macromolecular structure prediction and biological databases.

Includes: Experiential Learning Activity

Also listed as BIOC 3008 and BIOL 3008.

Prerequisite(s): BIOC 2200 or BIOL 2200, or BIOL 2201, or permission of the Biochemistry Institute.

Lecture two hours a week, computer workshop three hours a week.

COMP 3400 [0.5 credit]**Computational Logic and Automated Reasoning**

Applications of formal logic in computer science. Symbolic logics such as classical predicate calculus are used to represent domain knowledge, to model computational problems and to solve them by means of automated reasoners. Applications include artificial intelligence, software engineering, data management and hardware verification.

Prerequisite(s): COMP 2804.

Lectures three hours a week.

COMP 3501 [0.5 credit]**Foundations of Game Programming and Computer Graphics**

The theory and practice of 3D graphics for computer games. Topics include: vectors and quaternions; hierarchical transformations; camera and perspective; hardware-accelerated real-time rendering; texture and texture mapping; illumination; and particle systems.

Additional topics may include rigid-body motion, character animation, shadows, and screen-space special effects.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2501.

Lectures three hours a week.

COMP 3801 [0.5 credit]**Algorithms for Modern Data Sets**

Algorithm design techniques for modern data sets arising in, for example, data mining, web analytics, epidemic spreads, search engines and social networks. Topics may include: data mining, hashing, streaming, clustering, recommendation systems, link analysis, dimensionality reduction, online, social networking, game theoretic and probabilistic algorithms.

Prerequisite(s): COMP 2804 with a minimum grade of B+. Lecture three hours a week.

COMP 3803 [0.5 credit]**Introduction to Theory of Computation**

Theoretical aspects of computer science. Topics include: formal languages and automata theory, computability theory.

Precludes additional credit for COMP 2805 (no longer offered).

Prerequisite(s): COMP 2804.

Lectures three hours a week.

COMP 3804 [0.5 credit]**Design and Analysis of Algorithms I**

An introduction to the design and analysis of algorithms. Topics include: divide-and-conquer, dynamic programming, linear programming, greedy algorithms, graph algorithms, NP-completeness.

Also listed as MATH 3804.

Prerequisite(s): (COMP 2402 or SYSC 2100) and either COMP 2804 or (MATH 2007 and MATH 2108).

Lectures and tutorials three to four and a half hours a week.

COMP 3805 [0.5 credit]**Discrete Structures and Applications (Honours)**

Enumeration: inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes. Designs and finite geometries. Symmetry and counting.

Also listed as MATH 3855.

Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.

Prerequisite(s): MATH 2100 or a grade of B or higher in MATH 2108 or MATH 3101.

Lectures three hours a week and one hour tutorial.

COMP 3807 [0.5 credit]**Mathematical Software**

Incorporation of basic numerical methods into efficient, reliable software. The course includes examination of existing software systems, e.g. linear systems, non-linear systems, optimization, or differential equations.

Includes: Experiential Learning Activity

Also listed as MATH 3807.

Prerequisite(s): A grade of C- or higher in COMP 3806 or MATH 3806.

COMP 3910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 2911 and registration in internship option.

COMP 3911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3910 and registration in internship option.

COMP 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

COMP 4000 [0.5 credit]**Distributed Operating Systems**

An advanced course emphasizing the principles of distributed operating systems including networking protocols, distributed file systems, remote IPC mechanisms, graphical user interfaces, load balancing, and process migration. Case studies include current "standards" as well as novel systems under development.

Includes: Experiential Learning Activity

Prerequisite(s): (COMP 3000 or SYSC 4001) and (COMP 3203 or SYSC 4602).

Lectures three hours a week.

COMP 4001 [0.5 credit]**Distributed Computing**

Overview of distributed computing. Topics include: computational models, communication complexity, design and analysis of distributed algorithms and protocols, fault-tolerant protocols, synchronous computations. Applications may include: communication in data networks, control in distributed system (e.g., election, distributed mutual exclusion), manipulation of distributed data (e.g., ranking).

Prerequisite(s): COMP 1805 with a minimum grade of C-, COMP 2401 with a minimum grade of C-, and (COMP 2406 or SYSC 4504).

Lectures three hours a week.

COMP 4002 [0.5 credit]**Real-Time 3D Game Engines**

The design and implementation of game engines for real-time 3D games including topics such as camera control, environmental effects, articulated models, terrain, vegetation, collision detection, particles, emitters, triggers, portals, waypoints, mirrors, and shadows.

Prerequisite(s): COMP 2404 or SYSC 3010 or SYSC 3110.

Lectures three hours a week.

COMP 4003 [0.5 credit]**Transaction Processing Systems**

Concepts and architectures of transaction processing systems and on-line transaction processing, with emphasis on data integration systems. Transaction properties and models, embedded-SQL, active rules, consistency maintenance, serializability, concurrency control, recovery, data integration systems and federated databases, introduction to transactions in web services and workflow systems.

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 3005.

Lectures three hours a week.

COMP 4004 [0.5 credit]**Software Quality Assurance**

Introduction to the theory and practice of Software Quality Assurance. Topics include: equivalence partitioning, test-driven testing, unit testing patterns, refactoring, software metrics, requirements engineering, scenario modeling and acceptance testing, model-based testing, state machine testing, software testing theory and tools.

Precludes additional credit for SYSC 4101.

Prerequisite(s): COMP 3004.

Lectures three hours a week.

COMP 4009 [0.5 credit]**Programming for Clusters and Multi-Core Processors**

Introduction to parallel architectures, programming languages and algorithms for processor clusters and multi-core processors. Distributed memory architectures, cluster computing, message passing parallel programming, multi-core processors, shared memory parallel programming, use of thread libraries, parallel performance analysis.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.

Lectures three hours a week.

COMP 4102 [0.5 credit]**Computer Vision**

The basic ideas and techniques of computer vision. The central theme is reconstructing 3D models from 2D images. Topics include: image formation, image feature extraction, camera models, camera calibration, structure from motion, stereo, recognition, augmented reality, image searching.

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (MATH 1104 or MATH 1107).

Lectures three hours a week.

COMP 4107 [0.5 credit]**Neural Networks**

An introduction to neural networks and deep learning. Theory and application of Neural Networks to problems in machine learning. Various network architectures will be discussed. Methods for improving optimization and generalization of neural networks. Neural networks for unsupervised learning.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 5206.

Prerequisite(s): COMP 3105 and (MATH 1104 or MATH 1107).

Lectures three hours a week.

COMP 4108 [0.5 credit]**Computer Systems Security**

Information security in computer and communications systems. Topics include: design principles; operating system security and access control; web and software security; malicious software, security infrastructure; secure email; network authentication; firewalls; intrusion detection; IP security; network attacks; wireless security.

Precludes additional credit for SYSC 4810.

Prerequisite(s): (COMP 3000 or SYSC 4001) and

COMP 3109.

Lectures three hours a week.

COMP 4111 [0.5 credit]**Data Management for Business Intelligence**

Application of computational techniques to support business activities, such as decision making, business understanding, data analysis, business process automation, learning from data, producing and using data-centric business models, ontology-based data access and integration, data quality assessment and cleaning and use of contextual data.

Prerequisite(s): COMP 3005.

Also offered at the graduate level, with different requirements, as COMP 5111, for which additional credit is precluded.

Lectures three hours a week.

COMP 4202 [0.5 credit]**Computational Aspects of Geographic Information Systems**

Through recent advances in navigation systems, mobile devices, and new software such as Mapquest and Google Earth, GIS is becoming increasingly important and exciting from a CS perspective. This course lays the algorithmic foundations to understand, use and further this technology.

Prerequisite(s): COMP 3804 or MATH 3804.

Also offered at the graduate level, with different requirements, as COMP 5204, for which additional credit is precluded.

Lecture three hours a week.

COMP 4203 [0.5 credit]**Wireless Networks and Security**

An introduction to wireless networks covering both networking issues and security aspects of modern wireless environments. Fundamentals of mobile LANs, ad hoc, sensor networks, secure routing, searching, clustering, multicasting, localization, mobile IP/TCP, confidentiality, key establishment, authentication, broadcasting, RFIDs, and rogue attacks.

Prerequisite(s): COMP 3203 or SYSC 4602.

Lectures three hours a week.

COMP 4206 [0.5 credit]**Evolving Information Networks**

Convergence of social and technological networks. Interplay between information content, entities creating it and technologies supporting it. Structure and analysis of such networks, models abstracting their properties, techniques link analysis, search, mechanism design, power laws, cascading, clustering and connections with work in social sciences.

Prerequisite(s): COMP 1805, (COMP 2401 with a minimum grade of C-) and (COMP 2406 or SYSC 4504).

Also offered at the graduate level, with different requirements, as COMP 5310, for which additional credit is precluded.

Lecture three hours a week.

COMP 4308 [0.5 credit]**Computational Systems Biology**

Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.

Includes: Experiential Learning Activity

Also listed as BIOC 4008.

Prerequisite(s): BIOC 3101 or permission of the Biochemistry Institute.

Lecture one and a half hours per week, workshop one and a half hours per week.

COMP 4501 [0.5 credit]**Advanced Facilities for Real-Time Games**

A practical course on the design and implementation of modern game engines and advanced facilities provided by these engines. Such facilities include systems for rendering 3D scenes; simulating physics; playing animations; game AI; and enabling multi-player games. Students will undertake a significant game development project.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3501.

Lectures three hours a week.

COMP 4601 [0.5 credit]**Intelligent Web-based Information Systems**

Introduction to the principles and practice of creation, delivery and analysis of multimedia content in web-based systems. Topics include analysis of webs of documents, social network analysis, recommender systems and problems of trust, reputation and influence in e-commerce systems.

Includes: Experiential Learning Activity

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or COMP 2601 or SYSC 4504).

Lecture/lab four hours a week.

COMP 4602 [0.5 credit]**Social Networking**

Introduction to virtual communities, overlay networks and social networking. Topics include architectural principles for heterogeneous social networking platforms, trust and reputation as social concepts, agent-based computing, and extraction of trends and patterns from information exchanged between community members.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3601 (no longer offered).

Prerequisite(s): ((COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504)) or COMP 2601.

Lectures/labs four hours per week.

COMP 4701 [0.5 credit]**Computing, Society, and Ethics**

This course examines ethical questions raised by computing technologies - both motivated by recent developments and through the lens of fiction. Students will identify possible ethical issues in future technologies and use formal ethics frameworks to evaluate the merits and pitfalls of different solutions.

Includes: Experiential Learning Activity

Prerequisite(s): Any two of the following: COMP 3004, COMP 3005, COMP 3008, COMP 3105, COMP 3106, COMP 3109, COMP 3308, COMP 3804.

Lectures three hours a week.

COMP 4803 [0.5 credit]**Computable Functions**

Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness.

Also listed as MATH 4803.

Prerequisite(s): MATH 2100 or COMP 3805 or permission of the School.

COMP 4804 [0.5 credit]**Design and Analysis of Algorithms II**

A second course on the design and analysis of algorithms. Topics include: advanced recurrence relations, algebraic complexity, advanced graph algorithms, amortized analysis, algorithms for NP-complete problems, randomized algorithms.

Prerequisite(s): COMP 3804 or MATH 3804.

Lectures three hours a week.

COMP 4805 [0.5 credit]**Theory of Automata**

Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems.

Also listed as MATH 4805.

Precludes additional credit for MATH 5605.

Prerequisite(s): COMP 3805 or MATH 3106 or MATH 3158 (or MATH 3100) or permission of the School.

Lectures three hours a week.

COMP 4806 [0.5 credit]**Numerical Linear Algebra**

Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas.

Also listed as MATH 4806.

Prerequisite(s): MATH 2152 or MATH 1102 (no longer offered) or MATH 2107; and MATH 2000 and COMP 3806, or permission of the School.

Lectures three hours a week.

COMP 4900 [0.5 credit]**Advanced Topics in Computer Science**

Selected topics in Computer Science offered by members of the School of Computer Science.

Prerequisite(s): permission of the School of Computer Science.

Lectures three hours a week and up to three hours of tutorials a week.

COMP 4901 [0.5 credit]**Directed Studies**

Independent study under the supervision of a member of the School of Computer Science, open only to students in the B.C.S. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to two such courses in their program.

Prerequisite(s): permission of the School of Computer Science.

COMP 4905 [0.5 credit]**Honours Project**

Under the supervision of a faculty member, Honours students complete a major Computer Science project in fourth year. Permission to register is granted once an approved project proposal is submitted to the Department. See deadlines and details on the School web site.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4906.

Prerequisite(s): registration in the B.C.S. Honours program or one of the Combined Computer Science Honours programs and permission of the School of Computer Science.

COMP 4906 [1.0 credit]**Honours Thesis**

An independent research project under the direct supervision of a faculty advisor. Permission to register is granted once an approved project proposal is submitted to the School of Computer Science. Evaluation is based on a written thesis and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4905.

Prerequisite(s): fourth-year standing in a B.C.S. Honours program with a minimum CGPA of 9.0 in the major and permission of the School of Computer Science.

COMP 4910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3911 and registration in internship option.

COMP 4911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 4910 and registration in internship option.

Criminology and Criminal Justice

This section presents the requirements for programs in:

- CCJ with Concentration in Law B.A. Honours
- CCJ with Concentration in Psychology B.A. Honours
- CCJ with Concentration in Sociology B.A. Honours
- CCJ with Concentration in Law B.A.
- CCJ with Concentration in Psychology B.A.
- CCJ with Concentration in Sociology B.A.
- Minor in Criminology & Criminal Justice

Program Requirements**Criminology and Criminal Justice****B.A. Honours**

Students in the B.A. Honours program choose to follow one of the three following concentrations. The selection must take place before second year status is achieved.

CCJ with Concentration in Law**B.A. Honours (20.0 credits)****A. Credits Included in the Major CGPA (13.5 credits)**

1. 1.5 credit in:		1.5
CRCJ 1000 [0.5]	Introduction to Criminology and Criminal Justice	
CRCJ 2100 [0.5]	Criminological Theories	
CRCJ 2200 [0.5]	Contemporary Issues in Criminology & Criminal Justice	
2. 2.5 credits in:		2.5
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1	
3. 0.5 credit in LAWS at the 2000-level or higher		0.5
4. 1.5 credits in LAWS at the 3000-level or higher		1.5
5. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 3402 [0.5]	Criminal Behaviour	
6. 1.0 credit from:		1.0
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
SOCI 1003 [1.0]	Introduction to Sociological Perspectives	
7. 1.0 credit in:		1.0
SOCI 2450 [0.5]	Crime and Society	
SOCI 3410 [0.5]	Studies in Criminal Justice	
8. 1.0 credit in:		1.0
CRCJ 3001 [0.5]	Quantitative Methods in Criminology	
CRCJ 3002 [0.5]	Qualitative Methods in Criminology	
9. 1.5 credit in CRCJ or approved CCJ electives at the 3000-level or higher		1.5
10. 1.0 credit in CRCJ or approved CCJ electives at the 4000-level		1.0
B. Credits Not Included in the Major CGPA (6.5 credits)		
11. 5.0 credits in electives, not in Approved CCJ electives		5.0
12. 1.5 credits in free electives		1.5
Total Credits		20.0

Notes for all concentrations:

1. See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

CCJ with Concentration in Psychology

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 1.5 credit in:		1.5
CRCJ 1000 [0.5]	Introduction to Criminology and Criminal Justice	
CRCJ 2100 [0.5]	Criminological Theories	
CRCJ 2200 [0.5]	Contemporary Issues in Criminology & Criminal Justice	
2. 2.0 credits in:		2.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
3. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 3402 [0.5]	Criminal Behaviour	
4. 1.0 credit in:		1.0
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	
5. 0.5 credit in PSYC at the 2000-level or higher		0.5
6. 0.5 credit in PSYC at the 3000-level or higher		0.5
7. 1.0 credit from:		1.0
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
SOCI 1003 [1.0]	Introduction to Sociological Perspectives	
8. 1.0 credit in:		1.0
SOCI 2450 [0.5]	Crime and Society	
SOCI 3410 [0.5]	Studies in Criminal Justice	
9. 0.5 credit in:		0.5
CRCJ 3002 [0.5]	Qualitative Methods in Criminology	
10. 1.5 credit in CRCJ or Approved CCJ Electives at the 3000-level or higher		1.5
11. 1.0 credit in CRCJ or Approved CCJ Electives at the 4000-level		1.0
B. Credits Not Included in the Major CGPA (7.5 credits)		
12. 5.0 credits in electives, not in Approved CCJ Electives		5.0
13. 2.5 credits in free electives		2.5
Total Credits		20.0

Notes for all Concentrations:

- See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

CCJ with Concentration in Sociology

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 1.5 credit in:		1.5
CRCJ 1000 [0.5]	Introduction to Criminology and Criminal Justice	
CRCJ 2100 [0.5]	Criminological Theories	

CRCJ 2200 [0.5] Contemporary Issues in Criminology & Criminal Justice

2. 2.0 credits in:		2.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
3. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 3402 [0.5]	Criminal Behaviour	
4. 1.0 credit from:		1.0
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
SOCI 1003 [1.0]	Introduction to Sociological Perspectives	
5. 2.0 credits in:		2.0
SOCI 2000 [0.5]	Foundations of Sociological Inquiry	
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods	
SOCI 2450 [0.5]	Crime and Society	
SOCI 3410 [0.5]	Studies in Criminal Justice	
6. 0.5 credit in SOCI at the 2000-level or higher		0.5
7. 1.0 credit in SOCI at the 3000-level or higher		1.0
8. 0.5 credit in:		0.5
CRCJ 3001 [0.5]	Quantitative Methods in Criminology	
9. 1.5 credit in CRCJ or Approved CCJ Electives at the 3000-level or higher		1.5
10. 1.0 credit in CRCJ or Approved CCJ Electives at the 4000-level		1.0
B. Credits Not Included in the Major CGPA (7.0 credits)		
11. 5.0 credits in electives, not in Approved CCJ Electives		5.0
12. 2.0 credits in free electives		2.0
Total Credits		20.0

Notes for all Concentrations:

- See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

Program Requirements for Criminology and Criminal Justice

B.A.

Students in the B.A. program choose to follow one of the three following concentrations. The selection must take place before second year status is achieved.

CCJ with Concentration in Law

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.5 credit in:		1.5
CRCJ 1000 [0.5]	Introduction to Criminology and Criminal Justice	
CRCJ 2100 [0.5]	Criminological Theories	

CRCJ 2200 [0.5]	Contemporary Issues in Criminology & Criminal Justice	
2. 2.5 credits in:		2.5
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1	
3. 1.0 credits in LAWS at the 2000-level or higher		1.0
4. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 3402 [0.5]	Criminal Behaviour	
5. 1.0 credit from:		1.0
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
SOCI 1003 [1.0]	Introduction to Sociological Perspectives	
6. 1.0 credit in:		1.0
SOCI 2450 [0.5]	Crime and Society	
SOCI 3410 [0.5]	Studies in Criminal Justice	
7. 1.5 credit in CRCJ or approved CCJ Electives at the 3000-level		1.5
B. Credits Not Included in the Major CGPA (4.5 credits)		
8. 2.5 credits in electives, not in Approved CCJ electives		2.5
9. 2.0 credits in free electives		2.0
Total Credits		15.0

Notes for all concentrations:

1. See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

**CCJ with Concentration in Psychology
B.A. (15.0 credits)**

A. Credits Included in the Major CGPA (11.0 credits)		
1. 1.5 credit in:		1.5
CRCJ 1000 [0.5]	Introduction to Criminology and Criminal Justice	
CRCJ 2100 [0.5]	Criminological Theories	
CRCJ 2200 [0.5]	Contemporary Issues in Criminology & Criminal Justice	
2. 2.0 credits in:		2.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
3. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 3402 [0.5]	Criminal Behaviour	
4. 1.0 credit in:		1.0
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	

PSYC 2002 [0.5]	Introduction to Statistics in Psychology	
5. 1.0 credits in PSYC at the 2000-level or higher		1.0
6. 1.0 credit from:		1.0
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
SOCI 1003 [1.0]	Introduction to Sociological Perspectives	
7. 1.0 credit in:		1.0
SOCI 2450 [0.5]	Crime and Society	
SOCI 3410 [0.5]	Studies in Criminal Justice	
8. 1.5 credit in CRCJ or CCJ Approved Electives at the 3000-level		1.5
B. Credits Not Included in the Major CGPA (4.0 credits)		
9. 2.5 credits in electives, not in Approved CCJ electives		2.5
10. 1.5 credit in free electives		1.5
Total Credits		15.0

Notes for all concentrations:

1. See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

**CCJ with Concentration in Sociology
B.A. (15.0 credits)**

A. Credits Included in the Major CGPA (10.5 credits)		
1. 1.5 credit in:		1.5
CRCJ 1000 [0.5]	Introduction to Criminology and Criminal Justice	
CRCJ 2100 [0.5]	Criminological Theories	
CRCJ 2200 [0.5]	Contemporary Issues in Criminology & Criminal Justice	
2. 2.0 credits in:		2.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
3. 2.0 credits in:		2.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 3402 [0.5]	Criminal Behaviour	
4. 1.0 credit from:		1.0
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
SOCI 1003 [1.0]	Introduction to Sociological Perspectives	
5. 2.0 credits in:		2.0
SOCI 2000 [0.5]	Foundations of Sociological Inquiry	
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods	
SOCI 2450 [0.5]	Crime and Society	
SOCI 3410 [0.5]	Studies in Criminal Justice	
6. 0.5 credit in SOCI at the 2000-level or higher		0.5
7. 1.5 credit in CRCJ or Approved CCJ Electives at the 3000-level		1.5
B. Credits Not Included in the CGPA (4.5 credits)		
8. 2.5 credits in electives, not in Approved CCJ Electives		2.5

9. 2.0 credits in free electives	2.0
Total Credits	15.0

Notes for all concentrations:

1. See note entitled **Maximum Number of CCJ Credits** in the Regulations tab above, regarding the maximum permissible Criminology credits for your program.

Minor in Criminology & Criminal Justice (4.0 credits)

This minor is open to all undergraduate degree students in programs other than Criminology and Criminal Justice.

Requirements:

1. 1.5 credits in:		1.5
CRCJ 1000 [0.5]	Introduction to Criminology and Criminal Justice	
CRCJ 2100 [0.5]	Criminological Theories	
CRCJ 2200 [0.5]	Contemporary Issues in Criminology & Criminal Justice	
2. 1.0 credit in:		1.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
OR		
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
3. 0.5 credit from:		0.5
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
SOCI 2445 [0.5]	Sociology of Deviance	
SOCI 2450 [0.5]	Crime and Society	
4. 1.0 credits in CRCJ at the 3000-level or higher		1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied.		

Total Credits	4.0
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Course Categories for Criminology and Criminal Justice

APPROVED CCJ ELECTIVES

Criminology

CRCJ 3100 [0.5]	Policing (in)Security
CRCJ 3110 [0.5]	Policing and Public Health
CRCJ 3200 [0.5]	Indigeneity, Coloniality, and Crime
CRCJ 3201 [0.5]	Special Criminological Topics
CRCJ 3202 [0.5]	Special Criminological Topics
CRCJ 3901 [1.0]	Practicum in Criminology I
CRCJ 3902 [1.0]	Practicum in Criminology II
CRCJ 4001 [0.5]	Special Topics in Criminology
CRCJ 4002 [0.5]	Special Topics in Criminology
CRCJ 4100 [0.5]	Psychology of the Jury
CRCJ 4110 [0.5]	Race and the Criminal Justice System in Canada
CRCJ 4200 [0.5]	Policing Sex
CRCJ 4300 [0.5]	Social Control
CRCJ 4400 [0.5]	Crime, Emotions, and The Senses
CRCJ 4500 [0.5]	Art of (in)Justice
CRCJ 4600 [0.5]	Sociologies of Punishment

CRCJ 4910 [0.5]	Independent Study in Criminology and Criminal Justice
CRCJ 4920 [0.5]	Independent Study in Criminology and Criminal Justice
Law	
LAWS 3006 [0.5]	Mediation
LAWS 3209 [0.5]	Canadian Correctional Policies in Historical Perspective
LAWS 3305 [0.5]	Crime and State in History
LAWS 3306 [0.5]	Crime, Law, Process and Politics
LAWS 3307 [0.5]	Youth and Criminal Law
LAWS 3308 [0.5]	Punishment and the Law
LAWS 4302 [0.5]	Regulation of Corporate Crime
LAWS 4303 [0.5]	Drugs, The User and The State
LAWS 4304 [0.5]	Policing and Social Surveillance
LAWS 4305 [0.5]	Criminal Justice Reform
LAWS 4306 [0.5]	Criminal Law Issues
LAWS 4307 [0.5]	Medical Criminal Law Issues
LAWS 4308 [0.5]	Sentencing
LAWS 4309 [0.5]	State Security and Dissent
LAWS 4311 [0.5]	Human Rights in Canadian Prisons
LAWS 4504 [0.5]	Indigenous Criminal Justice
LAWS 4701 [0.5]	Special Topic in Criminal Justice and Social Policy
LAWS 4702 [0.5]	Special Topic in Criminal Justice and Social Policy
LAWS 4703 [0.5]	Special Topic in Criminal Justice and Social Policy
LAWS 4802 [0.5]	Criminal Jury Trials
Psychology	
PSYC 3403 [0.5]	Addiction
PSYC 3405 [0.5]	Psychology of Motivation and Emotion
PSYC 3507 [0.5]	Social Development
PSYC 3604 [0.5]	Clinical Psychology and Mental Illness
PSYC 4403 [0.5]	Female Offenders
PSYC 4404 [0.5]	Sex Offenders
Sociology	
SOCI 3055 [0.5]	Studies in Addictions
SOCI 3420 [0.5]	Studies in Gender and Criminal Justice
SOCI 3450 [0.5]	Studies in Law Enforcement
SOCI 4410 [0.5]	Advanced Studies in Criminology
SOCI 4702 [0.5]	Special Topic in Criminal Justice and Social Policy

Notes

- The total number of Criminology and Criminal Justice courses in the B.A. and B.A. (Honours) program may not exceed 12.5 (B.A.) and 15.0 (B.A. Honours). Consult the Institute if clarification is required.
- Students may request permission to offer courses towards the Major which are not listed as electives, including those offered by the Criminal Justice and Social Policy Summer School, as well as special topics courses offered from time to time by the Institute or Departments of Law, Psychology and Sociology.

Students should consult the Institute for a listing of courses approved as alternative electives.

Regulations

In addition to the program requirements described here, students must satisfy:

1. the University regulations (see the *Academic Regulations of the University* section of this Calendar),
2. the common regulations applying to all B.A. students. The B.A. Breadth requirement is waived for students in Criminology and Criminal Justice.

Students should consult with the Institute when selecting courses and planning their program.

Maximum Number of CCJ Credits

The total number of Criminology and Criminal Justice credits in the B.A. and B.A. (Honours) program may not exceed 12.5 (B.A.) and 15.0 (B.A. Honours). This is the sum of credits used in the Major and Concentration PLUS free electives chosen from the list of Approved CCJ electives. Consult the Institute if clarification is required.

Field Placement Practicum

The Field Placement Practicum (CRCJ 3901 [1.0] Practicum in Criminology I) is offered at the 3000-level to students in CCJ programs. Students complete a 1.0 (or 2.0) credit Field Placement Practicum course during the fall/winter session. To be eligible for the Practicum students must have completed at least 9.0 credits by May 1, including all of the 1000- and 2000-level requirements in the Major CGPA. Enrollment is restricted. A floating cutoff will be used to identify the students with the highest Major CGPA over those required courses, who may then receive permission to register for the Field Placement. Allocation of Field Placements will be determined by the Field Placement Coordinator.

Students wishing to register for a Field Placement Practicum must apply to the Institute no later than **May 1** of their second year. Applications are available at carleton.ca/criminology after January 1. If granted permission, students will then register in CRCJ 3901 [1.0] Practicum in Criminology I during registration. Students in the B.A. Honours program may receive permission to complete a 2.0 credit placement, in which case they will also register in CRCJ 3902 [1.0] Practicum in Criminology II.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-

year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information

Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

B.A. Honours Criminology and Criminal Justice

Admission to Criminology and Criminal Justice (CCJ) with advanced standing and transfer within the B.A. to CCJ by change of major is limited. Students require a minimum overall CGPA of 7.50 and will be admitted to the Honours program. Access to the CCJ B.A. degree is limited to CCJ B.A. Honours registered students who apply to transfer and to graduates of the Algonquin College Police Foundations program.

Criminology and Criminal Justice (CRCJ) Courses

CRCJ 1000 [0.5 credit]

Introduction to Criminology and Criminal Justice

Overview of the field, including the foundational approaches of criminology and criminal justice, crime as an object of study; criminal law and criminality in Canada; (neo) classical, aetiological and social reaction perspectives; alternative criminologies. Lectures/tutorials three hours a week.

CRCJ 2100 [0.5 credit]

Criminological Theories

Comprehensive survey of the plurality of criminological theories, from phrenology to contemporary theories concerned with issues related to crime and punishment. Students are encouraged to develop critical and reflexive thinking on various criminological issues and theories. Prerequisite(s): CRCJ 1000 and second-year standing. Lectures three hours per week.

CRCJ 2200 [0.5 credit]

Contemporary Issues in Criminology & Criminal Justice

Survey of contemporary criminological and criminal justice issues, ranging from criminalization, crime prevention, and surveillance strategies to debates about the criminal justice system, punishment, and reintegration. Specific topics will vary from year to year. Prerequisite(s): CRCJ 1000 and second-year standing. Lecture three hours per week.

CRCJ 3001 [0.5 credit]

Quantitative Methods in Criminology

Methods used conducting quantitative research. Topics include measuring and manipulating variables, reliability, validity, sampling, experimental, quasi-experimental designs and ethics. Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice. Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3002 [0.5 credit]**Qualitative Methods in Criminology**

Methods used conducting qualitative research. Topics include field research, interviewing, ethnographic research, content analysis and ethics.

Includes: Experiential Learning Activity

Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice.

Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3100 [0.5 credit]**Policing (in)Security**

Theories and case studies addressing contemporary efforts to police the world of (in)securities. Emphasis on Canadian dynamics within these broader transformations.

Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lecture and discussion three hours per week.

CRCJ 3110 [0.5 credit]**Policing and Public Health**

This interdisciplinary course introduces students to myriad ways in which the practices of Canadian public health authorities are intertwined with police and the criminal legal system. Students can expect interactive class activities and guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lecture and discussion three hours per week.

CRCJ 3200 [0.5 credit]**Indigeneity, Coloniality, and Crime**

This course explores issues related to Indigenous peoples, the criminal justice system and community with an emphasis on Indigenous scholarship and perspectives on criminology and crime.

Prerequisite(s): CRCJ 1000, INDG 1010, or INDG 1011, third year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lecture and discussion three hours per week.

CRCJ 3201 [0.5 credit]**Special Criminological Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lectures three hours per week.

CRCJ 3202 [0.5 credit]**Special Criminological Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lectures three hours per week.

CRCJ 3901 [1.0 credit]**Practicum in Criminology I**

Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3901 may not be repeated.

Includes: Experiential Learning Activity

Prerequisite(s): Third-year standing in a B.A. in Criminology and Criminal Justice, including all of the 1000- and 2000- level requirements in the Major CGPA, and permission of the Institute.

Field placement eight hours a week, seminar three hours a week.

CRCJ 3902 [1.0 credit]**Practicum in Criminology II**

Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3902 may not be repeated.

Includes: Experiential Learning Activity

Prerequisite(s): Third-year Honours standing in Criminology and Criminal Justice, including all of the 1000- and 2000- level requirements in the Major CGPA, and permission of the Institute.

Field placement eight hours a week, seminar three hours a week.

CRCJ 4001 [0.5 credit]**Special Topics in Criminology**

Examination of a special topic in criminology. Topics to be announced in advance of registration each year.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4002 [0.5 credit]**Special Topics in Criminology**

Examination of a special topic in criminology. Topics to be announced in advance of registration each year.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4100 [0.5 credit]**Psychology of the Jury**

This course will explore the jury system in Canada and other countries. Jury selection, deliberation, and instructions will be discussed, in addition to a number of legal and extra-legal influences on jury decision-making. Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4110 [0.5 credit]**Race and the Criminal Justice System in Canada**

A participatory class that explores debates regarding issues of racial bias and systemic racism in the Canadian criminal justice system. Students can expect class activities, documentary viewings, and guest lecturers from the field.

Prerequisite(s): CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4200 [0.5 credit]**Policing Sex**

This seminar explores the policing of consensual sexual practices, paying particular attention to the theorization of consent, harm, liberation and agency in a sexual and legal context.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4300 [0.5 credit]**Social Control**

Introduction to social control from early theorizations linking social control to the genesis of the self, to preoccupations with the sorting of humans and the guiding of their conducts, including contemporary engagements with moralization, penal intensification, sovereign exceptionality, and immigration control.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4400 [0.5 credit]**Crime, Emotions, and The Senses**

This course examines the relationship between sensations, emotions, affect, crime, criminalization, social control, and penalty. It questions the rational/emotional binary and investigates how shame, humiliation, fear, panic, pain, pleasure, disgust, empathy and revenge, relate to offender motivation, criminalization, victimization, adjudication, and punishment.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4500 [0.5 credit]**Art of (in)Justice**

A participatory class that explores how social and artist movements engage with issues of justice and injustice. Features group work, some off-campus classes during course hours, guest speakers.

Includes: Experiential Learning Activity
Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4600 [0.5 credit]**Sociologies of Punishment**

This introductory seminar on the sociology of punishment proposes an overview of theoretical perspectives animating its contemporary forms. This overview prepares the ground for a survey of contemporary scholarship and issues in the sociology of punishment.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4908 [1.0 credit]**Honours Thesis**

A research project conducted under the direct supervision of a faculty adviser from Criminology and Criminal Justice, Psychology, Law or Sociology. Mandatory workshops and symposiums are scheduled during the year.

Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in the B.A. Honours program in Criminology and Criminal Justice with a CGPA of 10.00 or better in the Major and permission of the Institute.

Workshops and symposiums as scheduled.

CRCJ 4910 [0.5 credit]**Independent Study in Criminology and Criminal Justice**

A reading or research course conducted under the supervision of a faculty advisor from Criminology and Criminal Justice, Psychology, Law or Sociology. Students may not include more than 1.0 credit of independent study in their total program.

Prerequisite(s): fourth-year standing in the B.A. Honours program in Criminology and Criminal Justice and permission of the Institute.

CRCJ 4920 [0.5 credit]**Independent Study in Criminology and Criminal Justice**

A reading or research course conducted under the supervision of a faculty advisor from Criminology and Criminal Justice, Psychology, Law or Sociology. Students may not include more than 1.0 credit of independent study in their total program.

Prerequisite(s): fourth-year standing in the B.A. Honours program in Criminology and Criminal Justice and permission of the Institute.

Critical Race Studies (Minor)

Program Requirements

Minor in Critical Race Studies (4.0 credits)

This minor is available to all undergraduate degree students.

Requirements:

1. 1.0 credit from:		1.0
FYSM 1402 [1.0]	Issues in Women's and Gender Studies	
WGST 1808 [1.0]	Introduction to Feminist Social Transformation	
2. 0.5 credit in:		0.5
CRST 2001 [0.5]	Introduction to Critical Race Studies	
3. 1.0 credits in CRST or CRST-approved electives at the 2000-level or higher		1.0
4. 1.5 credits in CRST or CRST-approved electives at the 3000-level or higher		1.5
5. The remaining credits of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Notes:

Other courses may be substituted for the credits specified in item 3 and 4, when material on critical race is central to the course. Such substitutions must be individually approved by the Institute of Women's and Gender Studies. Students are encouraged to consult course descriptions of Special Topics courses.

Approved Critical Race Studies Electives

Note: access to these courses is not guaranteed, and may depend on space availability and the satisfaction of other requirements such as course prerequisites.

African Studies

AFRI 2006 [0.5]	Southern Africa
AFRI 3001 [0.5]	Globalization and Popular Culture in Africa
AFRI 3002 [0.5]	Regions in Africa: Cultures, Society, Politics
AFRI 3003 [0.5]	African Social and Political Thought
AFRI 3005 [0.5]	African Migrations and Diasporas
AFRI 3609 [0.5]	African Cinema

Anthropology

ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
ANTH 2001 [1.0]	Foundations in Socio-Cultural Anthropology
ANTH 2020 [0.5]	Race and Ethnicity
ANTH 2610 [0.5]	Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa
ANTH 2630 [0.5]	Studies in Asian Societies: Current Issues in Anthropological Research
ANTH 2635 [0.5]	Tradition and Modernity in the Pacific
ANTH 2640 [0.5]	Andean Ethnography

ANTH 2660 [0.5]	Ethnography of North Africa
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology
ANTH 4020 [0.5]	Advanced Studies in Race and Ethnicity
ANTH 4109 [0.5]	Ethnography, Gender and Globalization
ANTH 4200 [0.5]	War, Security and Citizenship
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
ANTH 4730 [0.5]	Colonialism and Post-Colonialism
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship

Communications

COMS 3109 [0.5]	Communication, Culture and Identity
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Disability Studies

DBST 2001 [0.5]	Disabling Society
DBST 3001 [0.5]	Disability Studies: Policy and Activism
DBST 3060 [0.5]	Critical Disability Studies
DBST 3304 [0.5]	Disability and Childhood: Transnational Perspectives

Economics

ECON 3380 [0.5]	The Economics of Gender and Ethnicity
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European Studies

EURR 4008 [0.5]	Nationalism in Russia and Eurasia
EURR 4205 [0.5]	Politics of Identity in Europe and the Russian Area
EURR 4209 [0.5]	Politics of the Caucasus and Caspian Basin

Film Studies

FILM 3609 [0.5]	African Cinema
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Geography

GEOG 1023 [0.5]	Introduction to Cities and Urbanization
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3023 [0.5]	Cities in a Global World
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place
GEOG 4023 [0.5]	Seminar in Special Topics on the City
GEOG 4323 [0.5]	Urban and Regional Planning

History

HIST 3102 [0.5]	Queer(ing) Archives
HIST 3505 [0.5]	Women in Canada
HIST 3710 [0.5]	Themes in Caribbean History

Human Rights

HUMR 1001 [1.0]	Introduction to Human Rights	MUSI 4005 [0.5]	Issues in Jazz Studies
HUMR 2102 [0.5]	Sexuality, Gender, and Security	Philosophy	
HUMR 2502 [0.5]	Social and Political Movements	FYSM 1212 [0.5]	Contemporary Moral, Social, and Religious Issues
Indigenous and Canadian Studies		PHIL 1550 [0.5]	Introduction to Ethics and Social Issues
CDNS 1001 [0.5]	Introduction to the Study of Canada	PHIL 2306 [0.5]	Philosophy and Feminism
CDNS 2210 [0.5]	Introduction to the Study of Culture in Canada	PHIL 2307 [0.5]	Gender and Philosophy
CDNS 2300 [0.5]	Nationalism and Multiculturalism in Canada	Political Science	
CDNS 3700 [0.5]	Constructing and Contesting Memory in Canada	PSCI 2002 [0.5]	Canadian Politics and Civil Society
CDNS 4400 [0.5]	Space, Landscape and Identity in Canada	PSCI 2102 [0.5]	Comparative Politics of the Global South
CDNS 4500 [0.5]	Global Canada	PSCI 3006 [0.5]	Social Power in Canadian Politics
INDG 1000 [1.0]	Introduction to Indigenous Studies	PSCI 3105 [0.5]	Imperialism
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies	PSCI 3108 [0.5]	Politics of Popular Culture
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	PSCI 3109 [0.5]	The Politics of Law and Morality
INDG 2011 [0.5]	Contemporary Indigenous Studies	PSCI 3200 [0.5]	U.S. Constitutional Politics
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality	PSCI 3303 [0.5]	Feminist Political Theory
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	PSCI 3307 [0.5]	Politics of Human Rights
INDG 4001 [0.5]	Indigeneity in the City	PSCI 3805 [0.5]	Politics of Race
INDG 4011 [0.5]	Indigenous Representations	PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms
Journalism		PSCI 4203 [0.5]	Southern Africa After Apartheid
JOUR 4503 [0.5]	Investigating Journalism: Journalism, Indigenous Peoples and Canada	PSCI 4210 [0.5]	Political Identity through Graphic Novels
Latin American and Caribbean Studies		PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I	Religion	
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II	RELI 2712 [0.5]	Religious Diversity of Canada
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies	RELI 2720 [0.5]	Indigenous Religions of Canada
LACS 4819 [0.5]	Latin America and the World	RELI 3140 [0.5]	The Holocaust: Historical and Religious Dimensions
Law		RELI 3250 [0.5]	Evangelical Christianity in Social-Historical Perspective
LAWS 2105 [0.5]	Social Justice and Human Rights	Sexuality Studies	
LAWS 3006 [0.5]	Mediation	SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
LAWS 3105 [0.5]	Theory of Law and Politics	SXST 2102 [0.5]	Sexuality, Gender, and Security
LAWS 3106 [0.5]	Law and Social Regulation	SXST 3103 [0.5]	Sexuality and Disability
LAWS 3306 [0.5]	Crime, Law, Process and Politics	SXST 3104 [0.5]	Transnational Sexualities
LAWS 3503 [0.5]	Equality and Discrimination	SXST 3106 [0.5]	Queer(ing) Archives
LAWS 3504 [0.5]	Law and Aboriginal Peoples	SXST 4101 [0.5]	Interdisciplinary Studies of Sexuality
LAWS 3509 [0.5]	The Charter of Rights Topics	SXST 4102 [0.5]	Queer Theory
LAWS 3602 [0.5]	International Human Rights	SXST 4103 [0.5]	Politics of Kink
LAWS 4002 [0.5]	Feminist Theories of Law	SXST 4104 [0.5]	Sexuality and Political Economy
LAWS 4102 [0.5]	Controversies in Rights Theory	SXST 4105 [0.5]	Queer Ecologies
LAWS 4105 [0.5]	Global Justice Theory	SXST 4106 [0.5]	Queer Aesthetics: Affect, Cultural Production, Sexuality
LAWS 4305 [0.5]	Criminal Justice Reform	Social Work	
LAWS 4504 [0.5]	Indigenous Criminal Justice	SOWK 4301 [0.5]	Racialization and Social Work
LAWS 4601 [0.5]	Transnational Law and Human Rights	Sociology	
LAWS 4607 [0.5]	Immigration and Refugee Law	SOCI 1001 [0.5]	Introduction to Sociology I
LAWS 4800 [0.5]	Environment and Social Justice	SOCI 1002 [0.5]	Introduction to Sociology II
Music		SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
MUSI 2005 [0.5]	Introduction to Jazz History	SOCI 2020 [0.5]	Race and Ethnicity
		SOCI 2050 [0.5]	Sociology of Health
		SOCI 2170 [0.5]	Foundations in Social Justice

SOCI 2702 [0.5]	Power and Social Change
SOCI 3010 [0.5]	Power, Oppression and Resistance
SOCI 3019 [0.5]	Sociology of International Migration
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3040 [0.5]	Studies in the Sociology of Gender
SOCI 3056 [0.5]	Women and Health
SOCI 3060 [0.5]	Critical Disability Studies
SOCI 3170 [0.5]	Social Justice in Action
SOCI 3430 [0.5]	Studies in Collective Action and Social Movements
SOCI 3450 [0.5]	Studies in Law Enforcement
SOCI 3480 [0.5]	Law and Social Regulation
SOCI 3805 [0.5]	Studies in Population
SOCI 4020 [0.5]	Advanced Studies in Race and Ethnicity
SOCI 4039 [0.5]	Women in Contemporary Middle East Societies
SOCI 4040 [0.5]	Feminist Sociology of Intersectionality
SOCI 4043 [0.5]	Families in the 21st Century
SOCI 4160 [0.5]	War, Terrorism and State Terrorism
SOCI 4200 [0.5]	War, Security and Citizenship
SOCI 4730 [0.5]	Colonialism and Post-Colonialism
SOCI 4750 [0.5]	Advanced Studies in Globalization and Citizenship

Women's and Gender Studies

WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 2803 [0.5]	Body Matters: The Politics of Bodies
WGST 2811 [0.5]	Masculinities
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 2814 [0.5]	Gender, Sexuality and Cultural Production
WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3806 [0.5]	Girlhoods
WGST 3807 [0.5]	Gendered Violence
WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 4812 [0.5]	Selected Topics in Women's and Gender Studies

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Critical Race Studies (CRST) Courses

CRST 2001 [0.5 credit]

Introduction to Critical Race Studies

Foundations and central tenets of critical race theory, its interdisciplinary debates, applications, and evolutions. Historical roots of oppression, white settler-colonialism, understanding of privilege and power, social construction of race, socio-political conditions producing systemic and institutional racism, intersections with sexism, homophobia, transphobia, classism, and ableism. Includes: Experiential Learning Activity
Prerequisite(s): Second year standing.
Lectures and discussion three hours a week.

CRST 3812 [0.5 credit]

Interdisciplinary Topics in Critical Race Studies

An interdisciplinary analysis of one or more topics in critical race studies. The topics of this course will vary from year to year and are announced in advance of registration. Includes: Experiential Learning Activity
Prerequisite(s): Third year standing and WGST 1808 or FYSM 1402 or permission of the Institute of Women's and Gender Studies.
Lectures three hours per week. This course is repeatable when the topic changes.

CRST 4001 [0.5 credit]

Advanced Critical Race Studies

Interdisciplinary seminar on race, colonialism and feminisms including theories of racial and cultural difference, structures of privilege and power, and forms of resistance. Intersectional theoretical approaches to anti-colonial and feminist analyses of racial subjugation, and engagements with Black, Indigenous and women of colour feminisms. Includes: Experiential Learning Activity
Prerequisite(s): Fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.
Seminar three hours per week.

Digital Humanities

Program Requirements

Minor in Digital Humanities (4.0 credits)

Open to all undergraduate students.

Requirements:

1. 1.0 credit in:		1.0
DIGH 2001/ ENGL 2400 [0.5]	Introduction to Digital Humanities	
DIGH 2002/ ENGL 2401 [0.5]	Digital Humanities: Theory and Method	
2. 2.0 credits from:		2.0
DIGH 2035/ SOCI 2035 [0.5]	Technology, Culture and Society	
DIGH 2705/ SOCI 2705 [0.5]	Popular Culture in the Digital Age	
DIGH 3001/ ENGL 3401 [0.5]	The Book in the Digital Age	

DIGH 3812/ HIST 3812 [0.5]	Digital History	
DIGH 4001/ ENGL 4155 [0.5]	Studies in Digital Humanities	
DIGH 4002/ ENGL 4125 [0.5]	Digital Culture and the Text I	
DIGH 4003/ ENGL 4145 [0.5]	Digital Culture and the Text II	
DIGH 4004/ ENGL 4404 [0.5]	Digital Humanities Workshop	
DIGH 4005/ ENGL 4405 [0.5]	Digital Humanities Practicum	
HIST 4302 [1.0]	Canada: Ideas & Culture	
3. 1.0 credit in approved electives at the 1000 level or higher		1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Digital Humanities Electives

Applied Linguistics and Discourse Studies

ALDS 3701 [0.5] Corpus Linguistics

Greek and Roman Studies

CLCV 2305 [1.0] Ancient Science and Technology

Computer Science

COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students

Communication & Media Studies

COMS 2200 [0.5] Big Data and Society

English

ENGL 2100 [0.5] Topics in Popular Culture

ENGL 2107 [0.5] Science Fiction

Digital Humanities

DIGH 3001 [0.5] The Book in the Digital Age

DIGH 4001 [0.5] Studies in Digital Humanities

DIGH 4002 [0.5] Digital Culture and the Text I

DIGH 4003 [0.5] Digital Culture and the Text II

DIGH 4004 [0.5] Digital Humanities Workshop

DIGH 4005 [0.5] Digital Humanities Practicum

Film Studies

FILM 4901 [0.5] Special Topic

Geography and Environmental Studies

GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution

GEOM 2007 [0.5] Vector GIS: Points, Lines and Polygons

History

HIST 3812 [0.5] Digital History

HIST 4006 [1.0] Seminar in Medieval History

HIST 4805 [1.0] Seminar on a Transnational or Thematic Topic

Music

MUSI 3603 [0.5] Computer Music Techniques

Philosophy

PHIL 2106 [0.5] Information Ethics

Political Science

PSCI 3406 [0.5] Public Affairs and Media Strategies

PSCI 4003 [0.5] Politics and the Media

Sociology

SOCI 2035 [0.5] Technology, Culture and Society

SOCI 2705 [0.5] Popular Culture in the Digital Age

Systems and Computer Engineering

SYSC 1005 [0.5] Introduction to Software Development

SYSC 2001 [0.5] Computer Systems Foundations

Technology, Society, Environment Studies

TSES 3001 [0.5] Technology-Society Interactions

TSES 4005 [0.5] Information Technology and Society

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Digital Humanities (DIGH) Courses

DIGH 2001 [0.5 credit]

Introduction to Digital Humanities

An introduction to the principal debates in and approaches to the Digital Humanities.

Also listed as ENGL 2400.

Prerequisite(s): second-year standing or permission of the College of Humanities.

Lecture three hours a week.

DIGH 2002 [0.5 credit]

Digital Humanities: Theory and Method

A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects.

Includes: Experiential Learning Activity

Also listed as ENGL 2401.

Prerequisite(s): second-year standing or permission of the College of Humanities.

Lecture and workshop three hours a week.

DIGH 2035 [0.5 credit]

Technology, Culture and Society

Principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.

Also listed as SOCI 2035.

Precludes additional credit for SOCI 2400.

Prerequisite(s): SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.

Lectures/discussion groups three hours a week.

DIGH 2700 [0.5 credit]

Special Topics in Digital Humanities

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Lecture 3 hours per week.

DIGH 2705 [0.5 credit]**Popular Culture in the Digital Age**

An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.

Also listed as SOCI 2705.

Prerequisite(s): SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.

Lecture/discussion groups three hours a week.

DIGH 3001 [0.5 credit]**The Book in the Digital Age**

A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms.

Also listed as ENGL 3401.

Prerequisite(s): third-year standing, or permission of the College of Humanities.

Lecture three hours a week.

DIGH 3035 [0.5 credit]**Science, Culture and Society: Social Studies of Science**

Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.

Also listed as SOCI 3035, ANTH 3035.

Prerequisite(s): DIGH 2035 or SOCI 2035 and third-year standing.

Lecture three hours a week.

DIGH 3700 [0.5 credit]**Special Topics in Digital Humanities**

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Lecture 3 hours per week.

DIGH 3704 [0.5 credit]**Cognitive Science and the Digital Humanities**

Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.

Also listed as CGSC 3704.

Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.

Seminar three hours per week.

DIGH 3812 [0.5 credit]**Digital History**

The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).

Includes: Experiential Learning Activity

Also listed as HIST 3812.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lecture three hours a week.

DIGH 3814 [0.5 credit]**Crafting Digital History**

This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).

Includes: Experiential Learning Activity

Also listed as HIST 3814.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

DIGH 4001 [0.5 credit]**Studies in Digital Humanities**

A study of current issues and debates in Digital Humanities.

Also listed as ENGL 4155.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Seminar or lecture three hours a week.

DIGH 4002 [0.5 credit]**Digital Culture and the Text I**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as ENGL 4125.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Seminar or lecture three hours a week.

DIGH 4003 [0.5 credit]**Digital Culture and the Text II**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as ENGL 4145.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Seminar or lecture three hours a week.

DIGH 4004 [0.5 credit]**Digital Humanities Workshop**

This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.

Includes: Experiential Learning Activity

Also listed as ENGL 4404.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Workshop three hours a week.

DIGH 4005 [0.5 credit]**Digital Humanities Practicum**

Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.

Includes: Experiential Learning Activity

Also listed as ENGL 4405.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Practicum.

Disability Studies (Minor)

Program Requirements**Minor in Disability Studies (4.0 credits)**

Open to all undergraduate degree students.

Requirements:

1. 2.0 credits in:	2.0
WGST 1808 [1.0] Introduction to Feminist Social Transformation	
or FYSM 1402 [1.0] Issues in Women's and Gender Studies	
DBST 2001 [0.5] Disabling Society	
DBST 3001 [0.5] Disability Studies: Policy and Activism	
2. 1.0 credit from:	1.0
CHST 3304/ DBST 3304 [0.5] Disability and Childhood: Transnational Perspectives	
DBST 3002 [0.5] Critical Mad Studies	
HUMR 3304 [0.5] Disability Rights	
SOCI 3060/ DBST 3060 [0.5] Critical Disability Studies	
SOWK 4300 [0.5] Social Work and Persons with Disabilities	
SXST 3103 [0.5] Sexuality and Disability	
3. 1.0 credits in DBST or Approved Disability Studies Electives	1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Notes

1. Courses used to fulfill Items 2 and 3 above must be from more than one discipline.
2. Other courses may be substituted for the credits specified in Items 2 and 3, when material on disability is central to the course. Such substitutions must be

individually approved by the Pauline Jewett Institute of Women's and Gender Studies. Students are encouraged to consult course descriptions of Special Topics courses.

Approved Disability Studies Electives

Note: access to these courses is not guaranteed, and may depend on space availability and the satisfaction of other requirements such as course prerequisites.

APPROVED DISABILITY STUDIES ELECTIVES**Anthropology**

ANTH 3310 [0.5]	Studies in Medical Anthropology
ANTH 4780 [0.5]	Anthropology of Personhood

Critical Race Studies

CRST 2001 [0.5]	Introduction to Critical Race Studies
CRST 3812 [0.5]	Interdisciplinary Topics in Critical Race Studies
CRST 4001 [0.5]	Advanced Critical Race Studies

First Year Seminars (FYSM)

FYSM 1504 [1.0]	Society and the Designed Environment
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History

HIST 3515 [0.5]	Madness in Modern Times
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Human Rights

HUMR 3504 [0.5]	Public Health and Human Rights
HUMR 4305 [0.5]	Disability and Social Justice

Law

LAWS 3503 [0.5]	Equality and Discrimination
LAWS 3508 [0.5]	Health Law
LAWS 4503 [0.5]	Law, Disability and Society

Psychology

PSYC 2301 [0.5]	Introduction to Health Psychology
PSYC 2500 [0.5]	Foundations of Developmental Psychology

Public Administration

PADM 4221 [0.5]	Health Policy in Canada
PADM 4817 [0.5]	Health Policy in Developing Countries

Sexuality Studies

SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
SXST 2102 [0.5]	Sexuality, Gender, and Security
SXST 3103 [0.5]	Sexuality and Disability
SXST 3104 [0.5]	Transnational Sexualities
SXST 3106 [0.5]	Queer(ing) Archives
SXST 3812 [0.5]	Interdisciplinary Topics in Sexuality Studies
SXST 4101 [0.5]	Interdisciplinary Studies of Sexuality
SXST 4102 [0.5]	Queer Theory
SXST 4103 [0.5]	Politics of Kink
SXST 4104 [0.5]	Sexuality and Political Economy
SXST 4105 [0.5]	Queer Ecologies
SXST 4106 [0.5]	Queer Aesthetics: Affect, Cultural Production, Sexuality

Social Work

SOWK 4300 [0.5]	Social Work and Persons with Disabilities
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Sociology

SOCI 2050 [0.5]	Sociology of Health
SOCI 3050 [0.5]	Studies in the Sociology of Health
SOCI 3056 [0.5]	Women and Health

Technology, Society, Environment Studies

TSES 3001 [0.5]	Technology-Society Interactions
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Women's and Gender Studies

WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 2803 [0.5]	Body Matters: The Politics of Bodies
WGST 2810 [0.5]	Sex For Sale
WGST 2811 [0.5]	Masculinities
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 2814 [0.5]	Gender, Sexuality and Cultural Production
WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3807 [0.5]	Gendered Violence
WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 4060 [0.5]	African Feminisms
WGST 4812 [0.5]	Selected Topics in Women's and Gender Studies

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Disability Studies (DBST) Courses

DBST 1001 [0.5 credit]

Introduction to Disability Studies

Challenging negative stereotypes of disability by allowing students the opportunity to explore disability through many different venues including history, theory, culture, ethics, policy and disability rights. Reframing disability from personal tragedy to issues of oppression, access, inclusion and equality.

Lectures and discussion groups three hours per week.

DBST 2001 [0.5 credit]

Disabling Society

Interdisciplinary approach to the debates and theories that challenge the normative values, knowledge sources, and cultural representations of disablement in society.

Prerequisite(s): Second-year standing.

Lecture and discussion three hours a week.

DBST 3001 [0.5 credit]

Disability Studies: Policy and Activism

The complex legal, policy and discursive frameworks that shape the lives of persons with disability and the history of the emergence of the disability rights movement as a scholarly and activist challenge to, and renegotiation of, those frameworks.

Includes: Experiential Learning Activity

Precludes additional credit for DBST 4001 (no longer offered).

Prerequisite(s): third-year standing.

Lecture three hours a week.

DBST 3002 [0.5 credit]

Critical Mad Studies

A critical examination of the psy-disciplines, sanist beliefs and practices, and dominant mental health discourses in Canada and globally through mad-identified people's experiences, stories, and scholarship.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing and WGST 1808 or FYSM 1402 or permission of the Institute of Women's and Gender Studies.

Lecture three hours per week.

DBST 3060 [0.5 credit]

Critical Disability Studies

Course engages contemporary disability theory, culture, and activism to consider bodily difference and its relation to the workings of power and social control, accessibility, normalization, ableism, and medicalization. Students will gain an understanding of the contemporary debates, theories, and methodologies of critical disability studies. Also listed as SOCI 3060.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lectures three hours a week.

DBST 3301 [0.5 credit]

Introduction to Deaf Studies

A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond.

Also listed as ALDS 3301.

Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A if taken in Fall term 2016.

Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies.

Seminars three hours a week.

DBST 3304 [0.5 credit]**Disability and Childhood: Transnational Perspectives**

Drawing on theory and research in disabled children's childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies.

Also listed as CHST 3304.

Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies.

Lecture three hours a week.

DBST 3812 [0.5 credit]**Interdisciplinary Topics in Disability Studies**

An interdisciplinary analysis of one or more topics in critical disability studies. The topics of this course will vary from year to year and are announced in advance of registration.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing and WGST 1808 or FYSM 1402 or permission of the Institute of Women's and Gender Studies.

Lectures three hours per week. This course is repeatable when the topic changes.

DBST 3900 [0.5 credit]**Independent Study**

Essays, discussions, and/or examinations based on a bibliography constructed by the student in consultation with an instructor.

Prerequisite(s): third or fourth-year standing in the Disability Studies Minor and a CGPA of 9.0 or higher.

DBST 4812 [0.5 credit]**Interdisciplinary Topics in Disability Studies**

An interdisciplinary analysis of one or more topics in critical disability studies.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth year standing and WGST 1808 or FYSM 1402 OR permission of the Institute of Women's and Gender Studies.

Seminar three hours per week. This course is repeatable when the topic changes.

Earth Sciences

This section presents the requirements for programs in:

- Earth Sciences B.Sc. Honours
- Earth Sciences with Concentration in Finance: Resource Valuation B.Sc. Honours
- Earth Sciences with Concentration in Resource Economics B.Sc. Honours
- Earth Sciences with Concentration in Vertebrate Paleontology and Paleoecology B.Sc. Honours
- Earth Sciences with Concentration in Geophysics B.Sc. Honours
- Earth Sciences B.Sc. Major
- Earth Sciences B.Sc.

- Earth Sciences and Physical Geography B.Sc. Combined Honours
- Biology and Earth Sciences B.Sc. Combined Honours
- Chemistry and Earth Sciences B.Sc. Combined Honours
- Minor in Earth Sciences: Earth Resources and Processes

Program Requirements

Course Categories for Earth Sciences Programs

The program descriptions below make use of the following course categories that are defined in the *Academic Regulations for the Bachelor of Science Degree* section of this Calendar.

- Science Faculty Electives
- Advanced Science Faculty Electives
- Science Continuation Courses
- Science Geography
- Science Psychology
- Approved Courses Outside the Faculties of Science and Engineering and Design
- Free Elective

Earth Sciences

B.Sc. Honours (20.0 credits)**A. Credits Included in the Major CGPA (11.0 credits)**

1. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
2. 3.5 credits in:		3.5
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2105 [0.5]	Geodynamics	
ERTH 2312 [0.5]	Paleontology	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
ERTH 2802 [0.5]	Field Geology I	
3. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems (See Note, below)	
4. 3.0 credits in:		3.0
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3205 [0.5]	Physical Hydrogeology	
ERTH 3207 [0.5]	Metamorphic Petrology and Processes	
ERTH 3405 [0.5]	Geophysical Methods	
ERTH 3806 [0.5]	Structural Geology (See Note, below)	
5. 2.0 credits in EARTH at the 4000-level		2.0
6. 1.0 credit from:		1.0
ERTH 4908 [1.0]	Honours Thesis	
ERTH 4909 [0.5] and 0.5 credit in EARTH at the 4000 level		
B. Credits Not Included in the Major CGPA (9.0 credits)		
7. 1.0 credit in:		1.0

MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
8. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
9. 1.0 credit in:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
10. 0.5 credit in:		0.5
BIOL 1104 [0.5]	Foundations of Biology II	
11. 0.5 credit in:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
12. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
13. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
14. 1.0 credit in	Science Continuation Courses (not EARTH)	1.0
15. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science (or approved courses outside the faculties of Science and Engineering and Design)	
16. 1.5 credits in	approved courses outside the faculties of Science and Engineering and Design	1.5
17. 1.0 credit in	free electives.	1.0
Total Credits		20.0

Note:

- For Items 14-17, students admitted to the Minor in Business should substitute the requirements for the Minor. See the Business section of this Calendar.

Earth Sciences with Concentration in Finance: Resource Valuation

B.Sc. Honours (21.0 credits)

A. Credits included in the Major CGPA (10.5 credits)

1. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
2. 3.0 credits in:		3.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2105 [0.5]	Geodynamics	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
ERTH 2802 [0.5]	Field Geology I	
3. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems (See Note, below)	
4. 3.0 credits in:		3.0
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3205 [0.5]	Physical Hydrogeology	

ERTH 3207 [0.5]	Metamorphic Petrology and Processes	
ERTH 3405 [0.5]	Geophysical Methods	
ERTH 3806 [0.5]	Structural Geology (See Note, below)	
5. 0.5 credit in:		0.5
ERTH 4303 [0.5]	Resources of a Finite Earth	
6. 1.5 credits in	ERTH at the 4000-level	1.5
7. 1.0 credit from:		1.0
ERTH 4909 [0.5]	Research in Earth Sciences and 0.5 credit in EARTH at the 4000-level	
OR		
ERTH 4910 [1.0]	Honours Thesis in Resource Evaluation	
B. Credits Not Included in the Major CGPA (10.5 credits)		
8. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
9. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
10. 0.5 credit in:		0.5
PHYS 1007 [0.5]	Elementary University Physics I	
11. 0.5 credit from:		0.5
BIOL 1104 [0.5]	Foundations of Biology II	
COMP 1005 [0.5]	Introduction to Computer Science I	
12. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
13. 1.0 credit from:		1.0
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
& STAT 2509 [0.5]	Introduction to Statistical Modeling II	
14. 1.5 credit in:		1.5
ECON 1001 [0.5]	Introduction to Microeconomics	
& ECON 1002 [0.5]	Introduction to Macroeconomics	
ECON 2009 [0.5]	Managerial Economics	
15. 3.5 credits in:		3.5
BUSI 1001 [0.5]	Principles of Financial Accounting	
BUSI 1002 [0.5]	Management Accounting	
BUSI 2504 [0.5]	Business Finance I	
BUSI 2505 [0.5]	Business Finance II	
BUSI 3500 [0.5]	Applied Corporate Finance	
BUSI 3502 [0.5]	Investments	
BUSI 3512 [0.5]	Derivatives	
16. 1.0 credit from:		1.0
ECON 3803 [0.5]	The Economics of Natural Resources	
BUSI 4500 [0.5]	Advanced Corporate Finance	
BUSI 4510 [0.5]	Mergers and Acquisitions	
Total Credits		21.0

Earth Sciences with Concentration in Resource Economics

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit in:	1.0
ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
2. 3.5 credits in:	3.5
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes
ERTH 2105 [0.5]	Geodynamics
ERTH 2312 [0.5]	Paleontology
ERTH 2314 [0.5]	Sedimentation and Stratigraphy
ERTH 2406 [0.5]	Geology and Map Interpretation
ERTH 2802 [0.5]	Field Geology I
3. 0.5 credit from:	0.5
ERTH 3203 [0.5]	Sedimentology
ERTH 3206 [0.5]	Sedimentary Depositional Systems (See Note, below)
4. 3.0 credits in:	3.0
ERTH 3003 [0.5]	Geochemistry and Geochronology
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3207 [0.5]	Metamorphic Petrology and Processes
ERTH 3405 [0.5]	Geophysical Methods
ERTH 3806 [0.5]	Structural Geology (See Note, below)
5. 0.5 credit from:	0.5
ERTH 4303 [0.5]	Resources of a Finite Earth
ERTH 4306 [0.5]	Resource Basin Analysis
6. 1.5 credit in EARTH at the 4000-level	1.5
7. 1.0 credit from:	1.0
ERTH 4908 [1.0]	Honours Thesis
OR	
ERTH 4909 [0.5]	Research in Earth Sciences and 0.5 credit in EARTH at the 4000 level
B. Credits Not Included in the Major CGPA (9.0 credits)	
8. 3.5 credits in:	3.5
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium
ECON 2210 [0.5]	Introductory Statistics for Economics
ECON 2220 [0.5]	Introductory Econometrics
ECON 3509 [0.5]	Development Planning and Project Evaluation
9. 1.0 credit from:	1.0
ECON 3803 [0.5]	The Economics of Natural Resources
ECON 3804 [0.5]	Environmental Economics
ECON 4030 [0.5]	Economics of Uncertainty and Information

10. 1.0 credit in:	1.0
MATH 1007 [0.5]	Elementary Calculus I
MATH 1107 [0.5]	Linear Algebra I
11. 1.0 credit from:	1.0
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
12. 1.0 credit in:	1.0
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
13. 0.5 credit in:	0.5
BIOL 1104 [0.5]	Foundations of Biology II
14. 0.5 credit in:	0.5
COMP 1005 [0.5]	Introduction to Computer Science I
15. 0.5 credit in:	0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution

Total Credits **20.0**

Earth Sciences with Concentration in Vertebrate Paleontology and Paleoecology

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit in:	1.0
ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
2. 2.5 credits in:	2.5
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2105 [0.5]	Geodynamics
ERTH 2312 [0.5]	Paleontology
ERTH 2314 [0.5]	Sedimentation and Stratigraphy
ERTH 2406 [0.5]	Geology and Map Interpretation
3. 0.5 credit from:	0.5
ERTH 3203 [0.5]	Sedimentology
ERTH 3206 [0.5]	Sedimentary Depositional Systems (See note, below)
4. 2.0 credits in:	2.0
ERTH 3003 [0.5]	Geochemistry and Geochronology
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3113 [0.5]	Geology of Human Origins (See Note, below)
5. 0.5 credit from:	0.5
ERTH 4003 [0.5]	Directed Studies in Geology
ERTH 4808 [0.5]	Vertebrate Paleontology Field Camp
6. 1.0 credit from:	1.0
ERTH 4908 [1.0]	Honours Thesis
ERTH 4909 and 0.5 credit in EARTH at the 4000-level	
7. 3.0 credits from and to include 2.0 credits at the 4000-level:	3.0
BIOL 3104 [0.5]	Molecular Genetics
BIOL 3202 [0.5]	Principles of Developmental Biology
BIOL 3501 [0.5]	Biomechanics
BIOL 3605 [0.5]	Field Course I

BIOL 3609 [0.5]	Evolutionary Concepts	
BIOL 3611 [0.5]	Evolutionary Ecology	
BIOL 3802 [0.5]	Animal Behaviour	
BIOL 4104 [0.5]	Evolutionary Genetics	
BIOL 4207 [0.5]	Advanced Embryology & Developmental Biology	
BIOL 4500 [0.5]	The Biology of Birds	
BIOL 4502 [0.5]	Herpetology	
GEOM 3002 [0.5]	Introduction to Remote Sensing	
GEOG 3102 [0.5]	Geomorphology	
GEOG 3104 [0.5]	Principles of Biogeography	
ERTH 2401 [0.5]	Dinosaurs	
ERTH 3806 [0.5]	Structural Geology	
ERTH 4005 [0.5]	Micropaleontology	
ERTH 4305 [0.5]	Carbonate Sedimentology	
ERTH 4006 [0.5]	Geobiology	
ERTH 4007 [0.5]	Evolutionary Developmental Paleobiology	
ERTH 4306 [0.5]	Resource Basin Analysis	
ERTH 4403 [0.5]	Tectonic Evolution of Canada	
ERTH 4820 [0.5]	Research Methods in Earth Sciences	
B. Credits Not Included in the Major CGPA (9.5 credits)		
8. 2.5 credits in:		2.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
PHYS 1007 [0.5]	Elementary University Physics I	
9. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
10. 2.0 credits in:		2.0
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2600 [0.5]	Ecology	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
11. 0.5 credit in Science Faculty Electives (not EARTH or BIOL)		0.5
12. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
13. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science (or approved course outside the faculties of Science and Engineering and Design)	
14. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
15. 1.0 credits in free electives.		1.0
Total Credits		20.0

Note:

For **Item 3** above, EARTH 3203 is required if prerequisite conditions are met.

Earth Sciences with Concentration in Geophysics

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
2. 1.0 credit in:		1.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
3. 1.0 credit in:		1.0
PHYS 1001 [0.5]	Foundations of Physics I	
& PHYS 1002 [0.5]	Foundations of Physics II (recommended)	

OR

PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and	
	Wave Motion	

OR

PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II (with an average grade of B- or higher)	

4. 3.0 credits in:		3.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2105 [0.5]	Geodynamics	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
ERTH 2802 [0.5]	Field Geology I	
5. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	
6. 2.5 credits in:		2.5
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3205 [0.5]	Physical Hydrogeology	
ERTH 3405 [0.5]	Geophysical Methods	
ERTH 3806 [0.5]	Structural Geology	
7. 0.5 credit in:		0.5
ERTH 4707 [0.5]	Engineering Seismology	
8. 1.0 credit from:		1.0
ERTH 4908 [1.0]	Honours Thesis	

OR

ERTH 4909 [0.5]	Research in Earth Sciences	
	and 0.5 credit in EARTH at the 4000-level	

B. Credits Not Included in the Major CGPA (9.5 credits)

9. 0.5 credit from:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
10. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	

11. 1.0 credit in:		1.0
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
12. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
13. 4.5 credits from:		4.5
ERTH 2312 [0.5]	Paleontology	
ERTH 4003 [0.5]	Directed Studies in Geology	
ERTH 4107 [0.5]	Geotechnical Mechanics	
ERTH 4206 [0.5]	Contaminant and Remediation Hydrogeology	
ERTH 4303 [0.5]	Resources of a Finite Earth	
ERTH 4305 [0.5]	Carbonate Sedimentology	
ERTH 4306 [0.5]	Resource Basin Analysis	
ERTH 4402 [0.5]	Structural Geology	
ERTH 4403 [0.5]	Tectonic Evolution of Canada	
ERTH 4801 [0.5]	Physics of the Earth	
ERTH 4804 [0.5]	Exploration Geophysics	
ERTH 4807 [0.5]	Field Geology II	
ERTH 4820 [0.5]	Research Methods in Earth Sciences	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
MATH 3705 [0.5]	Mathematical Methods I	
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2305 [0.5]	Electricity and Magnetism	
PHYS 2604 [0.5]	Modern Physics I	
PHYS 3308 [0.5]	Electromagnetism	
PHYS 3807 [0.5]	Mathematical Physics I	
PHYS 4203 [0.5]	Physical Applications of Fourier Analysis	
14. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science or approved course outside the Faculties of Science and Engineering and Design	
15. 1.5 credits in free electives.		1.5
Total Credits		20.0

Earth Sciences

B.Sc. Major (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
2. 3.5 credits in:		3.5
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2105 [0.5]	Geodynamics	
ERTH 2312 [0.5]	Paleontology	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
ERTH 2802 [0.5]	Field Geology I	
3. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	

4. 3.0 credits in:		3.0
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3205 [0.5]	Physical Hydrogeology	
ERTH 3207 [0.5]	Metamorphic Petrology and Processes	
ERTH 3405 [0.5]	Geophysical Methods	
ERTH 3806 [0.5]	Structural Geology	
5. 3.0 credits in EARTH at the 4000-level		3.0
B. Credits Not Included in the Major CGPA (9.0 credits)		
6. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
7. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
8. 1.0 credit in:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
9. 0.5 credit in:		0.5
BIOL 1104 [0.5]	Foundations of Biology II	
10. 0.5 credit in:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
11. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
12. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
13. 1.0 credit in Science Continuation Courses (not EARTH)		1.0
14. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science (or approved courses outside the Faculties of Science and Engineering and Design)	
15. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
16. 1.0 credits in free electives.		1.0
Total Credits		20.0

Note:

- For Items 13-16, students admitted to the Minor in Business should substitute the requirements for the Minor. See the Business section of this Calendar.

Earth Sciences

B.Sc. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
2. 3.5 credits in:		3.5
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2105 [0.5]	Geodynamics	
ERTH 2312 [0.5]	Paleontology	

ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
ERTH 2802 [0.5]	Field Geology I	
3. 3.5 credits in:		3.5
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3205 [0.5]	Physical Hydrogeology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	
ERTH 3207 [0.5]	Metamorphic Petrology and Processes	
ERTH 3405 [0.5]	Geophysical Methods	
ERTH 3806 [0.5]	Structural Geology	

B. Credits Not Included in the Major CGPA (7.0 credits)

4. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
5. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
6. 1.0 credit from:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
BIOL 1104 [0.5]	Foundations of Biology II	
& PHYS 1007 [0.5]	Elementary University Physics I	
7. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
8. 0.5 credit in Science Continuation course (not ERTH)		0.5
9. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science (or approved course outside the faculties of Science and Engineering and Design)	
10. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
11. 1.0 credit in free electives		1.0
Total Credits		15.0

**Earth Sciences and Physical Geography
B.Sc. Combined Honours (20.0 credits)**

A. Credits Included in the Major CGPA (13.0 credits)

1. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
GEOG 1010 [0.5]	Global Environmental Systems	
2. 1.0 credit in:		1.0
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
3. 2.0 credits in:		2.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
4. 0.5 credit in:		0.5
ERTH 2802 [0.5]	Field Geology I	
5. 1.5 credits in:		1.5
ERTH 3003 [0.5]	Geochemistry and Geochronology	

ERTH 3405 [0.5]	Geophysical Methods	
ERTH 3806 [0.5]	Structural Geology	
6. 0.5 credit from:		0.5
ERTH 3205 [0.5]	Physical Hydrogeology	
GEOG 3103 [0.5]	Watershed Hydrology	
7. 1.0 credit in:		1.0
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
GEOG 3002 [0.5]	Introduction to Remote Sensing	
8. 2.0 credits from:		2.0
GEOG 3003 [0.5]	Quantitative Geography	
GEOG 3010 [0.5]	Field Methods in Physical Geography	
GEOG 3102 [0.5]	Geomorphology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
GEOG 3108 [0.5]	Soil Properties	
9. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	
10. 1.0 credit in Science Geography or Geomatics courses at the 2000-level or above		1.0
11. 1.0 credit in Earth Sciences, Science Geography or Geomatics courses at the 4000-level		1.0
12. 1.0 credit from:		1.0
ERTH 4908 [1.0]	Honours Thesis	
OR		
ERTH 4909 [0.5]	Research in Earth Sciences	
and 0.5 credit in ERTH, GEOG or GEOM at the 4000-level		
OR		
GEOG 4005 [0.5]	Directed Studies in Geography	
and 0.5 credit in ERTH, GEOG or GEOM at the 4000-level		
OR		
GEOG 4906 [1.0]	Honours Research Project	
B. Credits Not Included in the Major CGPA (7.0 credits)		
13. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
14. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
15. 1.0 credit in:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
16. 0.5 credit from:		0.5
GEOG 2006 [0.5]	Introduction to Quantitative Research	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
17. 0.5 credit in:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
18. 0.5 credit in approved electives (see list below)		0.5
19. 0.5 credit in:		0.5

NSCI 1000 [0.5]	Seminar in Science (or approved course outside of the faculties of Science and Engineering and Design)	
20. 1.5 credits in	approved courses outside of the faculties of Science and Engineering and Design	1.5
21. 0.5 credit in	free elective	0.5
Total Credits		20.0

Approved Electives - B.Sc. Earth Sciences and Physical Geography

Biology

BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	

Computer Science

COMP 1006 [0.5]	Introduction to Computer Science II	
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Chemistry

CHEM 2103 [0.5]	Physical Chemistry I	
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2207 [0.5]	Introduction to Organic Chemistry I	
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry	

Mathematics

MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2007 [0.5]	Elementary Calculus II	
MATH 2107 [0.5]	Linear Algebra II	

Physics

PHYS 2202 [0.5]	Wave Motion and Optics	
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Statistics

STAT 2509 [0.5]	Introduction to Statistical Modeling II	
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Biology and Earth Sciences

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.5 credits in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2001 [0.5]	Animals: Form and Function	
2. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
3. 0.5 credit from:		0.5
BIOL 2600 [0.5]	Ecology	
BIOL 3605 [0.5]	Field Course I	
4. 3.5 credits in	BIOL or BIOC, with at least 1.0 credit at the 3000-level and 1.0 credit at the 4000-level	3.5
5. 3.0 credits in:		3.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2312 [0.5]	Paleontology	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds	
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians	
ERTH 3113 [0.5]	Geology of Human Origins	
6. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	

ERTH 3206 [0.5]	Sedimentary Depositional Systems	
7. 1.0 credit in	ERTH at the 4000-level	1.0
8. 1.0 credit from:		1.0
BIOL 4905 [1.0]	Honours Workshop	
BIOL 4907 [1.0]	Honours Essay and Research Proposal	
BIOL 4908 [1.0]	Honours Research Thesis	
ERTH 4908 [1.0]	Honours Thesis	
ERTH 4909 [0.5]	Research in Earth Sciences (and 0.5 credit in EARTH at the 4000-level)	

B. Credits Not Included in the Major CGPA (8.0 credits)

9. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
10. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
11. 1.0 credit in:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
12. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
13. 0.5 credit in:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
14. 1.0 credit in	Science Continuation courses	1.0
15. 2.0 credits in	Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
16. 1.0 credit in	free electives	1.0
Total Credits		20.0

Chemistry and Earth Sciences

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.5 credits)

1. 4.0 credits in:		4.0
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
CHEM 2103 [0.5]	Physical Chemistry I	
CHEM 2302 [0.5]	Analytical Chemistry I	
CHEM 2303 [0.5]	Analytical Chemistry II	
CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry	
CHEM 3100 [0.5]	Physical Chemistry II	
CHEM 3503 [0.5]	Inorganic Chemistry I	
2. 1.0 credit in	CHEM at the 4000-level	1.0
3. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
4. 3.0 credits in:		3.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2105 [0.5]	Geodynamics	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	

ERTH 2802 [0.5]	Field Geology I	
5. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems (See Note, below)	
6. 2.0 credits in:		2.0
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3207 [0.5]	Metamorphic Petrology and Processes	
ERTH 3806 [0.5]	Structural Geology	
7. 1.0 credit in EARTH at the 4000-level		1.0
8. 1.0 credit from:		1.0
CHEM 4907 [1.0]	Honours Essay and Research Proposal	
CHEM 4908 [1.0]	Research Project and Seminar	
ERTH 4908 [1.0]	Honours Thesis	
ERTH 4909 [0.5]	Research in Earth Sciences (and 0.5 credit in EARTH at the 4000- level)	
B. Credits Not Included in the Major CGPA (6.5 credits)		
9. 1.0 credit in:		1.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1107 [0.5]	Linear Algebra I	
10. 0.5 credit from:		0.5
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2007 [0.5]	Elementary Calculus II	
11. 0.5 credit in:		0.5
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
12. 0.5 credit in:		0.5
ERTH 2004 [0.5]	Maps, Satellites and the Geospatial Revolution	
13. 1.0 credit from:		1.0
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
14. 0.5 credit in:		0.5
BIOL 1104 [0.5]	Foundations of Biology II	
15. 0.5 credit in Science Faculty Electives (not CHEM or EARTH)		0.5
16. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science (or approved course outside the faculties of Science and Engineering and Design)	
17. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
Total Credits		20.0

Note: for Item 5 above, EARTH 3203 is required if prerequisite conditions are met.

Minor in Earth Sciences: Earth Resources and Processes (4.0 credits)

The Minor is available to students registered in degree programs other than those offered by the Department of Earth Sciences.

Requirements

1. 1.0 credit in:		1.0
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
2. 2.5 credits from:		2.5
ERTH 2012 [0.5]	Planet Hollywood	
ERTH 2312 [0.5]	Paleontology	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2401 [0.5]	Dinosaurs	
ERTH 2402 [0.5]	Climate Change: An Earth Sciences Perspective	
ERTH 2403 [0.5]	Introduction to Oceanography	
ERTH 2415 [0.5]	Natural Disasters	
ERTH 2419 [0.5]	On the Origin of Planets	
ERTH 3113 [0.5]	Geology of Human Origins	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	
3. 0.5 credit in:		0.5
ERTH 4303 [0.5]	Resources of a Finite Earth	

Total Credits **4.0**

Regulations

In addition to program requirements described here, students must satisfy:

1. the University regulations (see the *Academic Regulations of the University* section of this Calendar),
2. the Faculty regulations applying to all B.Sc. students including those relating to Science Continuation and Breadth requirements.

Students should consult with the department, school or committee responsible for their program when planning their program and selecting courses.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars

PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Earth Sciences: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Earth Sciences students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: EARTH 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced

standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Earth Sciences (ERTH) Courses

ERTH 1006 [0.5 credit]

Exploring Planet Earth

Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 1001 (no longer offered), ERTH 1010, ERTH 2404.

Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are enrolled in the Faculty of Science. Lectures three hours a week, a laboratory three hours a week, and a field excursion.

ERTH 1009 [0.5 credit]

The Earth System Through Time

Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions, and the use of fossils for interpreting past ecosystems.

Includes: Experiential Learning Activity

Precludes additional credit for GEOL 1008 (no longer offered), ERTH 1011.

Prerequisite(s): This course is for students who are enrolled in the Faculty of Science.

Lectures three hours a week, a laboratory three hours a week.

ERTH 1010 [0.5 credit]

Our Dynamic Planet Earth

Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources.

Precludes additional credit for ERTH 1001 (no longer offered) and ERTH 1006.

Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are not enrolled in the Faculty of Science. Lectures three hours a week.

ERTH 1011 [0.5 credit]

Evolution of the Earth

Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions and the use of fossils for interpreting past ecosystems.

Precludes additional credit for GEOL 1008 (no longer offered) and ERTH 1009.

Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended; ERTH 1010 is normally taken prior to this course. This course is for students who are not enrolled in the Faculty of Science. Lectures three hours a week.

ERTH 2004 [0.5 credit]

Maps, Satellites and the Geospatial Revolution

Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing). Also listed as GEOM 1004.

Precludes additional credit for GEOM 2004 (no longer offered).

Lectures and laboratory, four hours a week.

ERTH 2012 [0.5 credit]

Planet Hollywood

Earth Science concepts and content portrayed in Hollywood films are sometimes accurate but more frequently misrepresented. This course will examine popular Hollywood films to critically evaluate the Earth Science concepts and content that they present and directly compare them to the actual science.

Online modules, bi-weekly film screenings and discussions four hours per week.

ERTH 2102 [0.5 credit]**Mineralogy to Petrology**

Chemical, optical and crystallographic properties of common rock-forming minerals, with introduction to common mineral assemblages of igneous, sedimentary, and metamorphic rocks.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3202 (no longer offered).

Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013) and (CHEM 1001 or CHEM 1005) and (CHEM 1002 or CHEM 1006) and (MATH 1004 or MATH 1007) and (MATH 1104 or MATH 1107).

Lectures two hours a week and laboratory three hours a week.

ERTH 2104 [0.5 credit]**Igneous Systems, Geochemistry and Processes**

The sources and magmatic evolution of volcanic and plutonic rocks systems, with emphasis on geochemical, mineralogical, and textural characteristics, and relations to igneous processes.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3202 (no longer offered).

Prerequisite(s): (CHEM 1001 or CHEM 1005) and (CHEM 1002 or CHEM 1006), (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107) and ERTH 2102.

Lectures three hours a week, laboratory three hours a week and a field excursion.

ERTH 2105 [0.5 credit]**Geodynamics**

The structure, composition, and rheological properties of the Earth: lithosphere, mantle and core. Plate tectonics and its relation to geophysical fields, driving mechanisms, and processes at plate boundaries and in plate interiors.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3805 (no longer offered).

Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).

Lectures two hours a week and a laboratory three hours a week.

ERTH 2312 [0.5 credit]**Paleontology**

Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 2316, GEOL 2301 (no longer offered) and GEOL 2306 (no longer offered).

Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).

Lectures two hours a week and a laboratory three hours a week.

ERTH 2314 [0.5 credit]**Sedimentation and Stratigraphy**

Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy; methods of correlation.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 2318.

Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).

Lectures three hours a week and a laboratory three hours a week.

ERTH 2316 [0.5 credit]**Paleoecology**

Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology.

Precludes additional credit for ERTH 2312. Not available for credit in B.Sc. Earth Sciences programs.

Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.

Lectures two hours a week.

ERTH 2318 [0.5 credit]**Sedimentology**

Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy and methods of correlation.

Precludes additional credit for ERTH 2314. Not available for credit in B.Sc. Earth Sciences programs.

Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.

Lectures three hours a week.

ERTH 2401 [0.5 credit]**Dinosaurs**

A general introduction to dinosaurs, their place in evolution, their social behaviour, the Mesozoic landscape and extinction theories.

Lectures three hours a week.

ERTH 2402 [0.5 credit]**Climate Change: An Earth Sciences Perspective**

An exploration of the often dramatic climate changes that have occurred through earth history from a geological perspective, emphasizing the history of earth climates, geological causes of climate change and impact that rapid climate change has had on the biosphere.

Lectures three hours a week.

ERTH 2403 [0.5 credit]**Introduction to Oceanography**

An environmental approach to understanding the oceans; introducing the physical and biological aspects of oceanography, marine resources and marine pollution.

Precludes additional credit for ERTH 3206.

Lectures three hours per week.

ERTH 2404 [0.5 credit]**Engineering Geoscience**

Applications of the basic concepts of geology, earth materials and earth processes to practical engineering and environmental science. Topics include rock and soil mechanics, slope stability, hydrogeology, geological hazards, and site investigations. Overview of related geophysical methods.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 2414 (no longer offered) and ERTH 1006.

Prerequisite(s): completion of first year of any B.Eng. program.

Lectures three hours a week and a laboratory three hours a week.

ERTH 2406 [0.5 credit]**Geology and Map Interpretation**

Analysis and interpretation of geological features and processes using rocks, maps and cross sections.

Introduction to computational methods.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2102 and ERTH 2004.

Lectures two hours a week and a laboratory three hours a week.

ERTH 2415 [0.5 credit]**Natural Disasters**

Physical characteristics and causes of natural disasters of geological origin such as volcanic eruptions, earthquakes, tsunamis, landslides, hurricanes and meteor impacts.

Discussion on historical perspective, societal impact and mitigation strategies. Emphasis on Canadian case histories.

Precludes additional credit for ERTH 1003 (no longer offered).

Prerequisite(s): second-year standing in any degree program. With the exception of the Minor in Earth Sciences, available as a free elective only in any B.Sc. program, including Earth Sciences.

Lectures three hours a week.

ERTH 2419 [0.5 credit]**On the Origin of Planets**

Origin and evolution of all planetary objects in the solar system. Topics include the geology of comets, asteroids, the terrestrial planets and rocky moons, Earth's formation and early evolution, ocean worlds, the search for exoplanets and detection of extraterrestrial life.

Lectures three hours a week.

ERTH 2802 [0.5 credit]**Field Geology I**

Field analysis using geological, geophysical and computational methods leading to the interpretation of the origins of geological features and processes.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2406 and permission of the department.

Field work for two weeks off campus. A supplementary fee will apply.

ERTH 3002 [0.5 credit]**Gemology**

Gemstones including their physical and chemical properties, geological formation and geographic occurrence. Introduction to gemological laboratory methods.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2102.

Lectures two hours a week and laboratory two hours a week.

ERTH 3003 [0.5 credit]**Geochemistry and Geochronology**

Geochemical composition of reservoirs from the deep Earth to surface environments. Use of geochemistry and isotope geochemistry to track geological processes. Introduction to a variety of scientific dating methods (geochronology).

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 2101 (no longer offered).

Prerequisite(s): ERTH 2102, ERTH 2104 and ERTH 2105.

Lecture three hours a week and a laboratory two hours a week.

ERTH 3111 [0.5 credit]**Vertebrate Evolution: Mammals, Reptiles, and Birds**

Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as BIOL 3111.

Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

ERTH 3112 [0.5 credit]**Vertebrate Evolution: Fish and Amphibians**

Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as BIOL 3112.

Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

ERTH 3113 [0.5 credit]**Geology of Human Origins**

The origin and evolution of our species from geological, biological and cultural perspectives. The course traces human ancestry from our primate roots through time and changing environments, and explores controversies, frauds, and misperceptions.

Prerequisite(s): any 1000 or 2000 level Earth Sciences or Biology course.

Lectures three hours per week.

ERTH 3203 [0.5 credit]**Sedimentology**

A 10-day field study of modern and ancient sedimentary and ecological systems and their stratigraphy in a geological region outside of the Ottawa area. Subsequent in-class seminars examine significant changes in sedimentary environments through Earth's history. A supplementary fee will apply.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 3201 (no longer offered).

Prerequisite(s): EARTH 2314, enrolment in one of the EARTH Honours, Combined Honours or Major programs, a 2000-level CGPA of 8.0 and permission of the Department.

Ten-day off-campus field course.

ERTH 3204 [0.5 credit]**Mineral Deposits**

Analysis and interpretation of the geological and geochemical processes responsible for mineral deposit genesis in a global context.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 2104.

Lectures and laboratory five hours a week.

ERTH 3205 [0.5 credit]**Physical Hydrogeology**

Principles of deep- to shallow fluid flow within the Earth's crust, and introduction to the exploration, development and management of groundwater as a global resource.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 1006 and (ERTH 1009 or GEOG 2013).

Lecture three hours a week and a laboratory three hours a week.

ERTH 3206 [0.5 credit]**Sedimentary Depositional Systems**

Application of sedimentary facies in class and local field-based settings to interpret modern and ancient depositional environments and stratigraphic succession related to climatic and oceanographic influences.

Subsequent in-class seminars examine significant changes in sedimentary environments through Earth's history.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 3208 (no longer offered).

Prerequisite(s): EARTH 2314.

Field and class based instruction, 6 hours a week.

ERTH 3207 [0.5 credit]**Metamorphic Petrology and Processes**

Genesis of metamorphic rocks as determined from field, petrographic and geochemical data.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 3202 (no longer offered).

Prerequisite(s): EARTH 2104.

Lectures two hours a week, a laboratory three hours a week and a field excursion.

ERTH 3405 [0.5 credit]**Geophysical Methods**

An introduction to the tools of applied geophysics including seismology, electrical, magnetic, and gravitational surveying methods.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 2405 (no longer offered).

Prerequisite(s): EARTH 2105.

Lecture two hours a week and a laboratory three hours a week.

ERTH 3806 [0.5 credit]**Structural Geology**

Structures and deformational processes in a variety of crustal settings. Applications to geological engineering and mineral and petroleum exploration.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 2105 and EARTH 2406.

Lecture two hours a week and a laboratory three hours a week.

ERTH 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ERTH 4003 [0.5 credit]**Directed Studies in Geology**

One or more projects involving at least 15 days field and/or laboratory research, not related to thesis research.

Assessment based on written reports and an oral presentation. Expenses for long-distance travel are borne by the student.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences.

Schedule to be arranged.

ERTH 4004 [0.5 credit]**Special Topics in Earth Sciences**

Field, laboratory or literature research, not related to thesis research. Assessment based on written reports and an oral presentation. Expenses for travel are borne by the student.

Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences. Major CGPA 8.5 or higher at time of registration for the course.

Schedule to be arranged.

ERTH 4005 [0.5 credit]**Micropaleontology**

Paleoecological and biostratigraphic significance, and evolutionary history of marine and freshwater microorganisms.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 2312.

Lectures, seminars and/or laboratory five hours a week.

ERTH 4006 [0.5 credit]**Geobiology**

Exploration of the relationship between micro- and macro-evolutionary processes and the Earth's physical and chemical environment. Paleobiology and evolutionary ecology in the context of paleoceanography, paleolimnology and paleoclimatology. May include one or two weeks of field based instruction with costs borne by the student.

Prerequisite(s): ERTH 2312.

Field excursions in addition to lectures or seminars three hours a week.

ERTH 4007 [0.5 credit]**Evolutionary Developmental Paleobiology**

This course explores the mechanistic basis of organismic evolution from genetic, morphogenetic and epigenetic perspectives, within a phylogenetic context of living and extinct vertebrates.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2312 or BIOL 2001, and BIOL 2104.

Lectures or seminars three hours per week.

ERTH 4107 [0.5 credit]**Geotechnical Mechanics**

Soil composition and soil classification. Soil properties, compaction, seepage and permeability. Concepts of pore water pressure, capillary pressure and hydraulic head. Principle of effective stress, stress-deformation and strength characteristics of soils, consolidation, stress distribution with soils, and settlement. Laboratory testing.

Includes: Experiential Learning Activity

Also listed as CIVE 3208.

Prerequisite(s): ERTH 2406 and ERTH 3405.

Lectures three hours a week, laboratory three hours alternate weeks.

ERTH 4206 [0.5 credit]**Contaminant and Remediation Hydrogeology**

Geochemical and physical processes controlling contaminant release, migration, and fate in groundwater along with the processes and techniques used for contaminant mitigation and remediation. Examples will include organic and inorganic contaminants in a variety of settings.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3003 and ERTH 3205.

Lectures and seminars three hours per week.

ERTH 4209 [0.5 credit]**Mineral Exploration Field Geology**

Introduction to the essentials of conducting geological mapping campaign in the Canadian Shield in a field area that has seen considerable industry exploration for volcanogenic massive sulfide mineralization. Activities include outcrop and trench mapping, strain analysis, interpretation of geophysical data, drilling proposals, report writing.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3209.

Prerequisite(s): ERTH 2104, ERTH 3207, ERTH 3806.

Field work for two weeks off-campus. A supplementary fee will apply.

ERTH 4303 [0.5 credit]**Resources of a Finite Earth**

Earth's resources: where they occur, how they are concentrated, how they are extracted and used, how human exploitation of natural resources affects the environment, and the limits to growth imposed by finite supplies of natural resources.

Prerequisite(s): third-year standing in any degree program.

Lectures three hours a week.

ERTH 4305 [0.5 credit]**Carbonate Sedimentology**

The origin, composition and diagenesis of carbonate rocks. Study of modern and ancient platform systems; development of facies models; petrographic and geochemical analysis of limestones and dolostones.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3203 or ERTH 3206.

Lecture two hours a week and a laboratory three hours a week.

ERTH 4306 [0.5 credit]**Resource Basin Analysis**

Surface and subsurface geological and geophysical techniques used to define the distribution and origin of geological basins, the architecture of basin fill, and characterize the distribution of water, petroleum and mineral resources.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3203 or ERTH 3206, ERTH 3205, and ERTH 3806.

Lectures, seminars and laboratory five hours a week.

ERTH 4402 [0.5 credit]**Structural Geology**

A study of the structural evolution of mountain belts, with emphasis on field methods.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3806.

Lectures, seminars and laboratory five hours a week.

ERTH 4403 [0.5 credit]**Tectonic Evolution of Canada**

Geologic evolution of Canada focusing on geological styles and tectonic processes of Archean cratons, Proterozoic and Phanerozoic orogenic belts.

Prerequisite(s): ERTH 3806.

Lectures and seminars three hours a week.

ERTH 4504 [0.5 credit]**Advanced Igneous Petrology**

Volcanology, petrology, mineralogy and geochemistry of igneous rocks and their tectonic setting. May include one to two weeks of field-based instruction with costs borne by the student.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3003.

Field excursions in addition to lectures or seminars three hours per week.

ERTH 4507 [0.5 credit]**Advanced Metamorphic Petrology**

Introduction to the quantitative analysis of pressure-temperature-time trajectories and rock-forming processes during metamorphic petrogenesis; may include one or two weeks of field-based instruction, with costs borne by the student.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2802 and ERTH 3207.

Field excursions, lectures, or seminars three hours per week.

ERTH 4707 [0.5 credit]**Engineering Seismology**

Seismological topics with engineering applications. Characterization of seismicity and seismic sources (areas and faults). Seismic hazard analysis. Empirical and theoretical modeling of strong ground motion in time and frequency domains.

Prerequisite(s): (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107), STAT 2507 and ERTH 3405 or permission of the department.

Also offered at the graduate level, with different requirements, as ERTH 5707, for which additional credit is precluded.

Lectures three hours a week.

ERTH 4801 [0.5 credit]**Physics of the Earth**

The physical properties of the solid Earth. Gravitational, magnetic and palaeomagnetic fields; seismology and earthquake occurrence; heat flow and thermal history. Geodynamic processes.

Prerequisite(s): ERTH 3405.

Also offered at the graduate level, with different requirements, as ERTH 5701, for which additional credit is precluded.

Lectures three hours a week.

ERTH 4803 [0.5 credit]**Radiogenic Isotope Geology**

Use of radiogenic isotope systems to understand the differentiation history and evolution of large-scale isotopic reservoirs. Data, models and interpretations behind our present day knowledge and understanding of the Earth's history. Assessment of geochronological results and interpretations.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3003.

Also offered at the graduate level, with different requirements, as ERTH 5609, for which additional credit is precluded.

Lectures, seminars or laboratories three hours per week.

ERTH 4804 [0.5 credit]**Exploration Geophysics**

Application of geophysical methods to explore for petroleum and mineral resources, with emphasis on seismic and electromagnetic methods. Case histories illustrate the concepts.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3405.

Lectures and laboratories five hours per week.

ERTH 4807 [0.5 credit]**Field Geology II**

Field camp integrating advanced field, theory and experimental data. Assessment is based on reports, seminars, and oral examinations. Part of the cost is borne by the student. Departmental funding assistance is available for only one 4000-level field course per student.

Includes: Experiential Learning Activity

Prerequisite(s): completion of the third-year Earth Sciences course requirements and permission of the Department. A supplementary fee will apply.

Field work off campus.

ERTH 4808 [0.5 credit]**Vertebrate Paleontology Field Camp**

Field camp extends the student's vertebrate paleontological knowledge by integrating field, theory, and experimental data. Assessment based on written reports and seminars. Part of the cost is borne by the student.

Departmental funding assistance is available for only one 4000-level field course per student.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3111 or ERTH 3112, and

ERTH 3113. A Major CGPA of 8.5 or higher and permission of the department is required at the time of registration.

Field work for two weeks off campus. A supplementary fee will apply.

ERTH 4815 [0.5 credit]**Natural Hazards in Canada**

Overview of the main natural hazards (such as floods, landslides, forest fires, earthquakes) and severe weather phenomena (such as ice storms, hail, tornadoes) in the Canadian environment. Risk of catastrophic events and their impact on society and infrastructure.

Prerequisite(s): third-year standing in earth science programs or permission of the department.

Also offered at the graduate level, with different requirements, as ERTH 5215 and IPIS 5505, for which additional credit is precluded.

Lectures three hours a week.

ERTH 4820 [0.5 credit]**Research Methods in Earth Sciences**

Research approaches, methodologies and resources in Earth Sciences; analytical methods in Earth Sciences; data acquisition, evaluation and interpretation; principles and strategies of scientific and professional writing; and communication of results.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Earth Sciences programs.

Lectures, seminars, or laboratories three hours a week.

May also include visits to other research institutes or workshops with visiting instructors.

ERTH 4908 [1.0 credit]**Honours Thesis**

Independent studies. Requires prior written approval of a topic from a supervisor and the course co-ordinator. Oral and written proposal, progress and defence reports are required.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 4909, ERTH 4910.

Prerequisite(s): restricted to B.Sc. Honours and Combined Honours ERTH programs. Major CGPA 8.5 or higher at time of registration for the course.

ERTH 4909 [0.5 credit]**Research in Earth Sciences**

Understanding research methods, data interpretation and presentation, through readings, seminars and-or laboratory projects related to a topic selected by the student with approval of a faculty advisor.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 4908, ERTH 4910.

Prerequisite(s): restricted to B.Sc. Honours and Combined Honours Earth Sciences programs.

ERTH 4910 [1.0 credit]**Honours Thesis in Resource Evaluation**

Independent studies: Analysis and interpretation of geological, environmental and/or financial data to determine economic value of a natural resource, and its viability for sustainable development. Requires approval of the supervisor and course coordinator. Oral and written proposal, progress and defence reports are required.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 4908 and ERTH 4909.

Prerequisite(s): Restricted to B.Sc. Honours in Earth Sciences with Concentration in Finance: Resource Valuation. Major CGPA 8.5 or higher at time of registration for the course.

Economics

This section presents the requirements for programs in:

- Economics B.Econ. Honours
- Economics B.Econ. Honours with Concentration
- Economics B. Econ. Honours with Concentrations
- Concentration in Computational Analysis
- Concentration in Development
- Concentration in Economic Data Science
- Concentration in Economic Theory
- Concentration in Financial Economics
- Concentration in International Political Economy
- Concentration in Natural Resources, Environment, and Economy
- Concentration in Mathematics and Quantitative Economics
- Economics B.Econ. Combined Honours
- Economics B.A. Honours Combined
- Economics B.Econ.
- Specialization in International Economic Policy B.G.In.S. Honours
- Stream in International Economic Policy B.G.In.S.
- Minor in Economics
- Minor in Industrial Economics
- Post-Baccalaureate Diploma in Economics

Program Requirements**Economics****B.Econ. Honours (20.0 credits)****A. Credits Included in the Major CGPA (10.5 credits)**

1. 6.5 credits in:	6.5
ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401/ MATH 1401 [0.5] Elementary Mathematics for Economics I	
ECON 1402/ MATH 1402 [0.5] Elementary Mathematics for Economics II	
ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure	

ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
ECON 2103 [0.5]	Intermediate Macroeconomics II	
ECON 2210 [0.5]	Introductory Statistics for Economics	
ECON 2220 [0.5]	Introductory Econometrics	
ECON 3900 [0.5]	Research Methods in Economics	
ECON 3920 [0.5]	Professional Practice of Economics	
ECON 4905 [0.5]	Honours Capstone Seminar (see Note 1 below)	
2. 2.0 credits in ECON at the 3000 level		2.0
3. 2.0 credits in ECON at the 4000 level		2.0
B. Credits Not Included in the Major CGPA (9.5 credits)		
4. 5.0 credits in electives not in ECON		5.0
5. 4.5 credits in free electives		4.5
Total Credits		20.0

Note: ECON 4908 [1.0] Honours Essay may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace the ECON 4905 requirement together with an ECON elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay guidelines maintained by the Department for further details.

Economics

B. Econ. Honours with Concentration (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 6.5 credits in:		6.5
ECON 1001 [0.5]	Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401/ MATH 1401 [0.5]	Elementary Mathematics for Economics I	
ECON 1402/ MATH 1402 [0.5]	Elementary Mathematics for Economics II	
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
ECON 2103 [0.5]	Intermediate Macroeconomics II	
ECON 2210 [0.5]	Introductory Statistics for Economics	
ECON 2220 [0.5]	Introductory Econometrics	
ECON 3900 [0.5]	Research Methods in Economics	
ECON 3920 [0.5]	Professional Practice of Economics	
ECON 4905 [0.5]	Honours Capstone Seminar (see Note 1 below)	
2. One of the concentrations described after the Economics B.Econ. Honours with Concentrations program below, also included in the Major CGPA		4.0
3. 1.0 credit in ECON at the 3000 level		1.0

4. 1.0 credit in ECON at the 4000 level		1.0
B. Credits Not Included in the Major CGPA (7.5 credits)		
5. 4.0 credits in electives not in ECON		4.0
6. 3.5 credits in free electives.		3.5
Total Credits		20.0

Note:

An Honours essay, ECON 4908 [1.0], may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace both the ECON 4905 requirement and a 0.5-credit 4000 level ECON elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay Guidelines maintained by the Department for further details.

Economics

B. Econ. Honours with Concentrations (20.0 credits)

A. Credits Included in the Major CGPA (14.5 credits)

1. 6.5 credits in:		6.5
ECON 1001 [0.5]	Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics	
ECON 1401/ MATH 1401 [0.5]	Elementary Mathematics for Economics I	
ECON 1402/ MATH 1402 [0.5]	Elementary Mathematics for Economics II	
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
ECON 2103 [0.5]	Intermediate Macroeconomics II	
ECON 2210 [0.5]	Introductory Statistics for Economics	
ECON 2220 [0.5]	Introductory Econometrics	
ECON 3900 [0.5]	Research Methods in Economics	
ECON 3920 [0.5]	Professional Practice of Economics	
ECON 4905 [0.5]	Honours Capstone Seminar (see Note, below)	
2. Two of the concentrations described below, also included in the Major CGPA		8.0
B. Credits Not Included in the Major CGPA (5.5 credits)		
3. 3.0 credits in electives not in ECON		3.0
4. 2.5 credits in free electives.		2.5
Total Credits		20.0

Note: an Honours essay, ECON 4908 [1.0], may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace both the ECON 4905 requirement and a 0.5 credit free elective requirement. Qualified students who choose to pursue the Honours essay pathway must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay

Guidelines maintained by the Department for further details.

Concentration in Computational Analysis (4.0 credits)

2a. 1.0 credit in:	1.0
COMP 1005 [0.5] Introduction to Computer Science I	
COMP 1006 [0.5] Introduction to Computer Science II (See Note 1 below)	
2b. 2.0 credits in:	2.0
COMP 2401 [0.5] Introduction to Systems Programming	
COMP 2402 [0.5] Abstract Data Types and Algorithms	
COMP 1805 [0.5] Discrete Structures I (see Note 2 below)	
COMP 2804 [0.5] Discrete Structures II	
2c. 1.0 credit from:	1.0
COMP 2404 [0.5] Introduction to Software Engineering	
COMP 3005 [0.5] Database Management Systems	
COMP 4111 [0.5] Data Management for Business Intelligence	
COMP 4003 [0.5] Transaction Processing Systems	
COMP 3803 [0.5] Introduction to Theory of Computation	
COMP 3804 [0.5] Design and Analysis of Algorithms I	
COMP 3801 [0.5] Algorithms for Modern Data Sets	
Total Credits	4.0

Notes:

- For Item 2a of the Concentration in Computational Analysis, COMP 1405 may replace COMP 1005 and COMP 1406 may replace COMP 1006.
- COMP 1805 in the Concentration in Computational Analysis is not required if precluded course MATH 1800 is required by another component of the student's program, such as the Concentration in Mathematics and Quantitative Economics, in which case an additional 0.5 credit in COMP is required from the list of electives in Item 2c.

Concentration in Development (4.0 credits)

2a. 3.0 credits in:	3.0
ECON 3508 [0.5] Introduction to Economic Development	
ECON 3509 [0.5] Development Planning and Project Evaluation	
ECON 4507 [0.5] The Economics of Development	
ECON 4508 [0.5] International Aspects of Economic Development	
PSCI 2102 [0.5] Comparative Politics of the Global South	
PSCI 4104 [0.5] Development in the Global South - Theory and Practice	
2b. 1.0 credit from:	1.0
ECON 3220 [0.5] Canadian Economic History	
ECON 3230 [0.5] Selected Topics in Economic History	
ECON 3510 [0.5] African Economic Development	

ECON 3808 [0.5] The Economics of Transition	
ECON 3870 [0.5] Comparative Economic Systems	
PSCI 4105 [0.5] Selected Problems in Development in the Global South	
PSCI 4409 [0.5] Issues in Development Management	
Total Credits	4.0

Concentration in Economic Data Science (4.0 credits)

2a. 1.5 credits in:	1.5
BUSI 2400 [0.5] Foundations of Information Systems	
COMP 1005 [0.5] Introduction to Computer Science I	
ECON 2708 [0.5] Applied Data Analysis	
2b. 2.0 credits in:	2.0
ECON 4002 [0.5] Statistical Analysis in Economics	
ECON 4706 [0.5] Econometrics I	
ECON 4708 [0.5] Economic Data Science - Analytics	
ECON 4709 [0.5] Economic Data Science - Applications	
2c. 0.5 credit from:	0.5
BUSI 4406 [0.5] Business Analytics	
BUSI 4408 [0.5] Social Analytics	
ECON 4707 [0.5] Econometrics II	
ECON 4713 [0.5] Time-Series Econometrics	
ECON 4880 [0.5] Special Topics in Economics	
Total Credits	4.0

Concentration in Economic Theory (4.0 credits)

2a. 3.0 credits in: Core Theory	3.0
ECON 3001 [0.5] Mathematical Methods of Economics	
ECON 4001 [0.5] Mathematical Analysis in Economics	
ECON 4002 [0.5] Statistical Analysis in Economics	
ECON 4020 [0.5] Advanced Microeconomic Theory	
ECON 4021 [0.5] Advanced Macroeconomic Theory	
ECON 4706 [0.5] Econometrics I	
2b. 1.0 credit in:	1.0
ECON at the 4000 level	
Total Credits	4.0

Concentration in Financial Economics (4.0 credits)

2a. 1.0 credit in:	1.0
BUSI 1001 [0.5] Principles of Financial Accounting	
BUSI 1002 [0.5] Management Accounting (See Note 1 below)	
2b. 1.5 credits from:	1.5
ECON 3050 [0.5] Introduction to Financial Economics	
ECON 4051 [0.5] Financial Asset Pricing	
ECON 4052 [0.5] Corporate Financial Economics	
or	
BUSI 3500 [0.5] Applied Corporate Finance	
BUSI 3502 [0.5] Investments	
BUSI 3512 [0.5] Derivatives (see Note 2, below)	

2c. 1.5 credits from:	1.5
ECON 3602 [0.5] International Monetary Problems or ECON 4602 [0.5] International Monetary Theory and Policy	
ECON 3607 [0.5] Monetary and Financial Institutions	
ECON 4053 [0.5] Financial Market Modeling	
ECON 4056 [0.5] Insurance Economics	
ECON 4057 [0.5] Behavioural Financial Economics	
PSCI 4805 [0.5] Political Economy of Global Money and Finance	
BUSI 2504 [0.5] & BUSI 2505 [0.5] and one of: BUSI 4500 [0.5], BUSI 4502 [0.5] (see Note 3, below)	
Total Credits	4.0

Notes

- For Item **2a** of the Concentration in Financial Economics, BUSI 1004 [0.5] may replace BUSI 1001 [0.5] and BUSI 1005 [0.5] may replace BUSI 1002 [0.5].
- For Item **2b** of the Concentration in Financial Economics, students taking BUSI 3500 [0.5], BUSI 3502 [0.5] and BUSI 3512 [0.5] must meet all required prerequisites for these courses as stated in the Undergraduate Calendar description at the time of registration.
- For Item **2c** of the Concentration in Financial Economics, BUSI 2504 [0.5] and BUSI 2505 [0.5] may not count for credit inside the major without also including either BUSI 4500 [0.5] or BUSI 4502 [0.5].

Concentration in International Political Economy (4.0 credits)

2a. 2.0 credits in:	2.0
ECON 4601 [0.5] International Trade Theory and Policy	
ECON 4602 [0.5] International Monetary Theory and Policy	
PSCI 2602 [0.5] International Relations: Global Political Economy	
PSCI 4603 [0.5] Analysis of International Political Economy	
2b. 1.0 credit from:	1.0
ECON 3807 [0.5] European Economic Integration or PSCI 3207 [0.5] The Government and Politics of European Integration	
PSCI 3204 [0.5] Politics of Latin America or PSCI 3205 [0.5] Mexican Politics	
PSCI 3600 [0.5] International Institutions	
PSCI 3703 [0.5] Governing in the Global Economy	
PSCI 3802 [0.5] Globalization and Human Rights or ANTH 3027 [0.5] Studies in Globalization and Human Rights or SOCI 3027 [0.5] Globalization and Human Rights	
2c. 1.0 credit from:	1.0
ECON 4508 [0.5] International Aspects of Economic Development	
PSCI 4207 [0.5] Globalization, Adjustment and Democracy in Africa	
PSCI 4500 [0.5] Gender and Globalization	
PSCI 4604 [0.5] Selected Problems in International Political Economy	

PSCI 4805 [0.5] Political Economy of Global Money and Finance	
Total Credits	4.0
Concentration in Natural Resources, Environment, and Economy (4.0 credits)	
2a. 3.0 credits in:	3.0
ECON 3803 [0.5] The Economics of Natural Resources	
ECON 3804 [0.5] Environmental Economics	
GEOG 2200 [0.5] Global Connections	
GEOG 2300 [0.5] Space, Place and Culture	
GEOG 3022 [0.5] Environmental and Natural Resources	
PSCI 3801 [0.5] Environmental Politics	
2b. 0.5 credit from:	0.5
ECON 4407 [0.5] Project Evaluation	
GEOG 4004 [0.5] Environmental Impact Assessment	
TSES 4001 [0.5] Technology and Society: Risk	
2c. 0.5 credit from:	0.5
ERTH 4303 [0.5] Resources of a Finite Earth	
GEOG 3209 [0.5] Sustainability and Environment in the South	
GEOG 4022 [0.5] Seminar in People, Resources and Environmental Change	
PSCI 4808 [0.5] Global Environmental Politics	
TSES 3002 [0.5] Energy and Sustainability	
Total Credits	4.0

Concentration in Mathematics and Quantitative Economics (4.0 credits)

2a. 1.5 credits in:	1.5
MATH 1800 [0.5] Introduction to Mathematical Reasoning	
MATH 2052 [0.5] Calculus and Introductory Analysis II	
MATH 2152 [0.5] Introductory Algebra II (See Notes 1-4, below)	
2b. 1.0 credit from:	1.0
MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis (See Note 5, below)	
2c. 1.0 credit from:	1.0
MATH 2108 [0.5] Abstract Algebra I	
MATH 2404 [0.5] Ordinary Differential Equations I or MATH 2454 [0.5] Ordinary Differential Equations (Honours)	
MATH 3001 [0.5] Real Analysis I (Honours)	
MATH 3007 [0.5] Functions of a Complex Variable or MATH 3057 [0.5] Functions of a Complex Variable (Honours)	
MATH 3107 [0.5] Linear Algebra III	
MATH 3705 [0.5] Mathematical Methods I	
MATH 3800 [0.5] Mathematical Modeling and Computational Methods or MATH 3806 [0.5] Numerical Analysis (Honours) (See Note 6, below)	
2d. 0.5 credit from:	0.5
ECON 4004 [0.5] Operations Research I or MATH 3801 [0.5] Linear Programming	

ECON 4005 [0.5]	Operations Research II
ECON 4700 [0.5]	Measurement Economics
MATH 4007 [0.5]	Measure and Integration Theory (Honours)
MATH 4205 [0.5]	Introduction to General Topology (Honours)
(See Note 7, below)	
Total Credits	4.0

Notes:

- Students enrolled in the Concentration in Mathematics and Quantitative Economics must replace ECON 1401 [0.5] and ECON 1402 [0.5] in Item 1 of the B.Econ. Honours with Concentration(s) program requirements with either (i) MATH 1052 [0.5] and MATH 1152 [0.5], or (ii) MATH 1007 [0.5] and MATH 1107 [0.5]. Students who intend to take MATH 2000 [1.0] are strongly recommended to choose option (i). Please note that MATH 2000 is a prerequisite to upper year MATH courses such as MATH 3001 [0.5].
- Students who have completed MATH 1004 [0.5] and MATH 1104 [0.5] can replace ECON 1401 [0.5] and ECON 1402 [0.5] in Item 1 of the B.Econ. Honours with Concentration(s) program requirements.
- MATH 2007 [0.5] may replace MATH 2052 [0.5]. Students who intend to take MATH 2000 [1.0] are strongly recommended to take MATH 2052 [0.5].
- MATH 2107 Linear Algebra II may replace MATH 2152 [0.5]. Students who intend to take MATH 2000 [1.0] are strongly recommended to take MATH 2152 [0.5].
- MATH 2008 [0.5] may replace MATH 2000 [1.0]. In this case, the credit requirement under Item 2b will be reduced from 1.0 credit to 0.5 credit, and the credit requirement under Item 2c will be increased from 1.0 credit to 1.5 credit.
- Students interested in other 3000 level MATH courses not listed under requirement 2c, may seek permission from the Department of Economics to have these courses count towards this requirement.
- Students interested in other 4000 level MATH courses not listed under requirement 2d, may seek permission from the Department of Economics to have these courses count towards this requirement.

Economics

B.Econ. Combined Honours (20.0 credits)

Students admitted to the Bachelor of Economics may register for a Combined Bachelor of Economics and any other discipline in which a B.A. Combined program is available.

A. Credits Included in the Economics Major CGPA (7.5 credits)

1. 6.5 credits in:	6.5
ECON 1001 [0.5]	Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics
ECON 1401/ MATH 1401 [0.5]	Elementary Mathematics for Economics I
ECON 1402/ MATH 1402 [0.5]	Elementary Mathematics for Economics II

ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium
ECON 2102 [0.5]	Intermediate Macroeconomics I
ECON 2103 [0.5]	Intermediate Macroeconomics II
ECON 2210 [0.5]	Introductory Statistics for Economics
ECON 2220 [0.5]	Introductory Econometrics
ECON 3900 [0.5]	Research Methods in Economics
ECON 3920 [0.5]	Professional Practice of Economics
ECON 4905 [0.5]	Honours Capstone Seminar (see Note 1 below)
2. 1.0 credit in ECON at the 3000 or 4000 level	1.0
B. Additional Requirements (12.5 credits)	12.5
3. The requirements for Combined Honours in the other discipline must be satisfied	
4. Sufficient credits in free electives to make 20.0 credits for the degree.	
Total Credits	20.0

Note: ECON 4908 [1.0] Honours Essay, may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may replace the ECON 4905 requirement together with an ECON elective requirement. Qualified students who choose to pursue the Honours essay stream must first complete an Honours essay prospectus to the satisfaction of both their advisor and the Undergraduate Supervisor. See The Honours Essay guidelines maintained by the Department for further details.

Economics

B.A. Honours Combined (20.0 credits)

Students already enrolled in a B.A. discipline may add Economics as an additional discipline under the B.A. Combined Honours. Economics course requirements for the B.A. Combined Honours are the same as those listed under the B.Econ. Combined Honours, above.

Economics

B.Econ. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 3.5 credits in:	3.5
ECON 1001 [0.5]	Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics
ECON 1401/ MATH 1401 [0.5]	Elementary Mathematics for Economics I
ECON 1402/ MATH 1402 [0.5]	Elementary Mathematics for Economics II
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure
ECON 2102 [0.5]	Intermediate Macroeconomics I
ECON 2210 [0.5]	Introductory Statistics for Economics
2. 3.5 credits in ECON at the 2000 level or higher	3.5
B. Credits Not Included in the Major CGPA (8.0 credits)	
3. 6.0 credits in electives not in ECON	6.0

4. 2.0 credits in free electives. 2.0

Total Credits 15.0

Specialization in International Economic Policy B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5

GINS 1000 [0.5] Global History

GINS 1010 [0.5] International Law and Politics

GINS 1020 [0.5] Ethnography, Globalization and Culture

GINS 2000 [0.5] Ethics and Globalization

GINS 2010 [0.5] Globalization and International Economic Issues

GINS 2020 [0.5] Global Literatures

GINS 3010 [0.5] Global and International Theory

GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization

a. 1.0 credit in: Foundations 1.0

ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics

or

FYSM 1003 [1.0] Introduction to Economics

b. 0.5 credit in: Microeconomics 0.5

ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors

or ECON 2009 [0.5] Managerial Economics

or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure

c. 0.5 credit in: Macroeconomics 0.5

ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors

or ECON 2102 [0.5] Intermediate Macroeconomics I

d. 0.5 credit in: Research Methodologies 0.5

IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis

or ECON 2210 [0.5] Introductory Statistics for Economics

e. 2.0 credits in: International and Public Economics 2.0

ECON 3403 [0.5] Introduction to Public Economics: Expenditures

ECON 3405 [0.5] Introduction to Public Economics: Taxation

ECON 3601 [0.5] Introduction to International Trade

ECON 3602 [0.5] International Monetary Problems

f. 3.0 credits from: International Economic Policy 3.0

ECON 3370 [0.5] The Economics of Migration

ECON 3508 [0.5] Introduction to Economic Development

ECON 3509 [0.5] Development Planning and Project Evaluation

ECON 3510 [0.5] African Economic Development

ECON 3803 [0.5] The Economics of Natural Resources

ECON 3804 [0.5] Environmental Economics

ECON 3807 [0.5] European Economic Integration

ECON 3808 [0.5] The Economics of Transition

ECON 3860 [0.5] Agricultural Economics

ECON 3870 [0.5] Comparative Economic Systems

Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Stream in International Economic Policy B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5] Global History

GINS 1010 [0.5] International Law and Politics

GINS 1020 [0.5] Ethnography, Globalization and Culture

GINS 2000 [0.5] Ethics and Globalization

GINS 2010 [0.5] Globalization and International Economic Issues

GINS 2020 [0.5] Global Literatures

GINS 3010 [0.5] Global and International Theory

GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Foundations

ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics

or FYSM 1003 [1.0] Introduction to Economics

b. Microeconomics

ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors

or ECON 2009 [0.5] Managerial Economics

or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure

c. Macroeconomics

ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors

or ECON 2102 [0.5] Intermediate Macroeconomics I

d. Research Methodologies

IPAF 2000 [0.5] Quantitative Approaches to Policy Analysis

or ECON 2210 [0.5] Introductory Statistics for Economics

e. International Economic Policy

ECON 3403 [0.5] Introduction to Public Economics: Expenditures

ECON 3405 [0.5] Introduction to Public Economics: Taxation

ECON 3508 [0.5]	Introduction to Economic Development	
ECON 3509 [0.5]	Development Planning and Project Evaluation	
ECON 3510 [0.5]	African Economic Development	
ECON 3601 [0.5]	Introduction to International Trade	
ECON 3602 [0.5]	International Monetary Problems	
ECON 3803 [0.5]	The Economics of Natural Resources	
ECON 3804 [0.5]	Environmental Economics	
ECON 3807 [0.5]	European Economic Integration	
ECON 3808 [0.5]	The Economics of Transition	
ECON 3860 [0.5]	Agricultural Economics	
ECON 3870 [0.5]	Comparative Economic Systems	

Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in: Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Minor in Economics (4.0 credits)

Open to all undergraduate degree students not pursuing a Major in Economics or the B.G.In.S. Specialization or Stream in International Economic Policy.

Requirements:

1. 1.0 credit in: 1.0

ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics

2. 0.5 credit in: 0.5

ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors or ECON 2009 [0.5] Managerial Economics or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure

3. 0.5 credit in: 0.5

ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors or ECON 2102 [0.5] Intermediate Macroeconomics I

4. 0.5 credit in: 0.5

ECON at the 2000 level or higher, or IPAF 2000 [0.5]

5. 1.5 credits in ECON at the 2000 level or higher 1.5

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Minor in Industrial Economics (4.0 credits)

Open to all B.Eng. students and other undergraduate degree students not pursuing a Major in Economics who have successfully completed ECOR 3800 and SYSC 3200 while registered in a B.Eng. program.

Requirements:

1. 1.0 credit in: 1.0

ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics

2. 0.5 credit in: 0.5

ECON 2009 [0.5] Managerial Economics or ECON 2020 [0.5] Intermediate Microeconomics I: Producers and Market Structure

3. 1.5 credits from: 1.5

ECON 2030 [0.5] Intermediate Microeconomics II: Consumers and General Equilibrium

ECON 3300 [0.5] Public Policy Toward Business

ECON 3360 [0.5] Introduction to Labour Economics

ECON 3365 [0.5] Introduction to Industrial Relations

ECON 3509 [0.5] Development Planning and Project Evaluation

ECON 3804 [0.5] Environmental Economics

ECON 3864 [0.5] Transportation Economics

ECON 4005 [0.5] Operations Research II

ECON 4020 [0.5] Advanced Microeconomic Theory

ECON 4301 [0.5] Market Structure and Firm Behaviour

ECON 4309 [0.5] Applied Industrial Economics

ECON 4407 [0.5] Project Evaluation

4. 1.0 credit in: 1.0

ECOR 3800 [0.5] Engineering Economics

SYSC 3200 [0.5] Industrial Engineering

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Post-Baccalaureate Diploma in Economics (4.0 credits)

Admission to this program requires the permission of the Department of Economics.

Requirements:

1. 3.0 credits in: 3.0

ECON 4001 [0.5] Mathematical Analysis in Economics

ECON 4002 [0.5] Statistical Analysis in Economics

ECON 4020 [0.5] Advanced Microeconomic Theory

ECON 4021 [0.5] Advanced Macroeconomic Theory

ECON 4706 [0.5] Econometrics I

ECON 4990 [0.5] Research and Writing in Economics

2. 1.0 credit in electives approved by the Department, normally in economics at the 4000 level but may include ESLA 1906 and/or ECON 3001. 1.0

Total Credits 4.0

Bachelor of Economics Regulations

The regulations presented in this section apply to all Bachelor of Economics (B.Econ.) programs.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.Econ. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0

credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.Econ. program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

0000-Level Courses

Students in B.Econ. programs may not count any 0000-level Mathematics courses for credit toward their degree. Such students may, however, be required to take one or more of these courses to replace missing program prerequisites in which case the courses will be set aside as “no credit for degree” (NCD).

Access to Economics Courses

To meet the prerequisite requirements for most 2000-level Economics courses, students must have obtained a grade of C- or higher in ECON 1401 and a grade of C- or higher in FYSM 1003 [1.0] or ECON 1000 [1.0] or, equivalently, an average grade of C- or higher in ECON 1001 and ECON 1002, one or both of which have been transferred from another university.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database.

Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Economics Honours: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the second year of the Bachelor of Economics Honours program
2. A major CGPA of 8.00 or higher and an overall CGPA of 8.00 or higher;
3. Successfully completed all required first- and second-year courses before beginning the first work term.

To obtain the co-op designation in Bachelor of Economics, students must successfully complete three (3) work terms.

Work Term Report Course: ECON 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Economics (B.Econ.) (Honours)
- Bachelor of Economics (B.Econ.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) and 4U Advanced Functions (or equivalent). MATH 0005 taken at Carleton with a minimum grade of C- also satisfies the Advanced Functions requirement.

Applicants who do not present with Advanced Functions or MATH 0005 may be admitted conditionally with the requirement that they complete MATH 0005 with a minimum grade of C- in their first term of study in the degree in order to be eligible to continue.

Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;

2. be registered as a full-time student in a Bachelor of Economics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the *Co-operative Education Regulations* section of this Calendar.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma

• Post-Baccalaureate Diploma in Economics

To be eligible for admission to the Post-Baccalaureate Diploma in Economics students must normally have:

1. an undergraduate degree with a GPA of 9.0 or higher, preferably with honours,
2. successfully completed university-level introductory (micro- and macro-) economics, calculus, and linear algebra with a grade of C+ or higher in each, and
3. permission of the Department of Economics.

Students may be granted advanced standing to a maximum of 1.0 credit. Advanced standing does not negate the 3.0 credit residency requirement.

Note: students who already hold an honours undergraduate degree in economics are encouraged to apply for admission to graduate programs in economics through the Graduate Admissions web site at graduate.carleton.ca.

Economics (ECON) Courses

ECON 1000 [1.0 credit]

Introduction to Economics

An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation, and international economic problems.

Precludes additional credit for ECON 1001, ECON 1002, and FYSM 1003.

Lectures three hours a week, discussion groups one hour a week.

ECON 1001 [0.5 credit]

Introduction to Microeconomics

An introduction to the major tools and policy problems of microeconomics. Economic analysis is applied to a variety of contemporary issues such as taxation, pollution, wage determination, poverty, market power, and international trade.

Precludes additional credit for ECON 1000 and FYSM 1003.

Lectures three hours a week, discussion groups one hour a week.

ECON 1002 [0.5 credit]

Introduction to Macroeconomics

An introduction to the major tools and policy problems of macroeconomics. Economic analysis is applied to a variety of contemporary problems such as: saving, investment and interest rates; unemployment; money and inflation; exchange rates; fiscal and monetary policy.

Precludes additional credit for ECON 1000 and FYSM 1003.

Lectures three hours a week, discussion groups one hour a week.

ECON 1401 [0.5 credit]

Elementary Mathematics for Economics I

Functional relations: functional forms and error terms. Graphing economic magnitudes: scatter diagrams, time-series graphs, functional relationships. Applied calculus: mechanics of differentiation and integration, elasticity, consumer/producer surplus. Applied algebra: solving systems of linear equations and Keynesian national-income analysis. Problem solving approaches.

Also listed as MATH 1401.
Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.

Prerequisite(s): Ontario Grade-12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1001 or ECON 1000 or FYSM 1003, which may be taken concurrently with ECON 1401.

Lectures three hours a week, tutorials one hour a week.

ECON 1402 [0.5 credit]**Elementary Mathematics for Economics II**

Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.

Also listed as MATH 1402.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1201, BIT 1200, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401 or MATH 1401 with a grade of C- or higher.

Lectures three hours a week, tutorials one hour a week.

ECON 2001 [0.5 credit]**Intermediate Microeconomics for Non-Mathematical Majors**

The main topics in microeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their applications. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.I.B., B.Math., or B.Sc. program.

Precludes additional credit for ECON 2002 (no longer offered), ECON 2003 (no longer offered), ECON 2009, ECON 2020, and ECON 2030.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2009 [0.5 credit]**Managerial Economics**

An economic analysis of managerial decision-making. Elements of production and cost; price and output determination under perfectly and imperfectly competitive market structures; the role of information; topics in business strategy; and the impact of government intervention. Not open to students in any Economics program.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2020.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; MATH 1009 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and half hours a week.

ECON 2020 [0.5 credit]**Intermediate Microeconomics I: Producers and Market Structure**

Theory of the firm: elements of production and cost; input allocation, pricing, and firm behaviour under perfectly and imperfectly competitive market structures; the role of information; game theory and public policy, including basic competition policy.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2009.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2030 [0.5 credit]**Intermediate Microeconomics II: Consumers and General Equilibrium**

Theory of consumer choice and demand; applications to intertemporal choice, labour supply, and/or choice under uncertainty; welfare analysis; general equilibrium theory; externalities and the role of government.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), and ECON 2003 (no longer offered).

Prerequisite(s): ECON 2020 with a grade of C- or higher or ECON 2009 with a grade of C+ or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2101 [0.5 credit]**Intermediate Macroeconomics for Non-Mathematical Majors**

The main topics in macroeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their application. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.Math., or B.Sc. program.

Precludes additional credit for ECON 2102 and ECON 2103.

Prerequisite(s): ECON 1002 or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2102 [0.5 credit]**Intermediate Macroeconomics I**

An introduction to the macroeconomic modeling of output in the short and long run, and to fixed-price models of the closed and open economy over the business cycle. Policy prescriptions in relation to the business cycle are analysed.

Precludes additional credit for ECON 2101.

Prerequisite(s): ECON 1002 or ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2103 [0.5 credit]**Intermediate Macroeconomics II**

An extension of macroeconomic modeling to the dynamics of wage-price adjustment in the intermediate and long run, to the theoretical foundations of basic macroeconomic relationships, and to contemporary policy issues arising in relation to the business cycle and long-run growth.

Precludes additional credit for ECON 2101.

Prerequisite(s): ECON 2102 with a grade of C- or higher, ECON 1001 with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2210 [0.5 credit]**Introductory Statistics for Economics**

Basic statistical methods for the study of economics.

Topics include descriptive statistics, elementary probability theory, sampling distributions, estimation and hypothesis testing for one and two population parameters.

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2200 (no longer offered), ECON 2201 (no longer offered), STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2220 [0.5 credit]**Introductory Econometrics**

Topics include correlation, simple and multiple linear regression, and an introduction to statistical computing using an econometrics package. Emphasis on understanding appropriate methods and their properties, as distinct from their formal theoretical development. Empirical applications.

Precludes additional credit for ECON 2200 (no longer offered), ECON 2202 (no longer offered), STAT 2509, and STAT 2607.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2708 [0.5 credit]**Applied Data Analysis**

An introduction to concepts and tools for using various forms of data to study applied economic problems. Topics may include identifying relevant datasets, collecting and cleaning both research-ready and user-assembled data sets, data visualization, and summary statistics.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1005 or COMP 1405 or ECOR 1606, or equivalent, with a grade of C- or higher; and ECON/MATH 1402, with a grade of C- or higher (or an equivalent department-approved MATH course pair with a grade of C- or higher in each); and ECON 2210 (or equivalent), with a grade of C+ or higher.

Lectures three hours a week, tutorial 1.5 hours a week.

ECON 3001 [0.5 credit]**Mathematical Methods of Economics**

Constrained optimization via Lagrange and Kuhn-Tucker conditions; implicit functions and implicit differentiation; comparative static methods applied to models such as utility maximization and least-cost production; homogeneous functions; concave and convex functions; compounding and exponential functions; economic models involving integration; differential equations.

Precludes additional credit for ECON 2400 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; and ECON 1401 and ECON 1402 (or equivalent) with a grade of C- or higher in each and a combined grade point average in ECON 1401 and ECON 1402 of 6.50 or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 3050 [0.5 credit]**Introduction to Financial Economics**

The major theories and basic tools used to address modern financial economic issues. Topics may include time value of money, bond and stock valuation, investment criteria, capital budgeting, the risk-return tradeoff, options and option valuation, cost of capital, and the fundamentals of international corporate finance.

Precludes additional credit for BUSI 2503, BUSI 2504, ECON 2504 (no longer offered), BUSI 2505, and ECON 2505 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002 each with a grade of C- or higher, or ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON/MATH 1402 (or approved equivalent pair of first year math courses) with a grade of C- or higher, and BUSI 1002 or BUSI 1005 with a grade of C- or higher.

Lectures three hours a week.

ECON 3201 [0.5 credit]**Economic Thought and Policy in Canada**

An account of the interrelationship between economic theories expounded in Canada and their issue in national policy.

Precludes additional credit for ECON 3404 (no longer offered).

Prerequisite(s): an introductory course in one of the social sciences or Canadian history.

Lectures three hours a week.

ECON 3220 [0.5 credit]**Canadian Economic History**

A survey of Canadian economic history from the sixteenth century to the present.

Also listed as HIST 3220.

Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3203 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3230 [0.5 credit]**Selected Topics in Economic History**

An examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year.

Also listed as HIST 3230.

Precludes additional credit for ECON 3005 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3300 [0.5 credit]**Public Policy Toward Business**

The interaction of government and business in the Canadian economy. Reasons for government involvement in selected public policy areas. Topics covered may include competition policy, regulation of firms by boards and commissions, environmental regulation, and public enterprise.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3360 [0.5 credit]**Introduction to Labour Economics**

Basic principles of labour economics including market, institutional, and sociological forces. Technology and labour demand, wage systems, human capital, internal wage structure, market discrimination, female labour-force entry, wage-price spiral, household labour supply, and wage determination.

Precludes additional credit for ECON 3506 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4305 (no longer offered) or ECON 4306 (no longer offered) or ECON 4360.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3365 [0.5 credit]**Introduction to Industrial Relations**

An introduction to industrial relations covering such topics as: industrial relations systems, the functioning of trade unions, collective bargaining in Canada, and Canadian public policy in industrial relations.

Precludes additional credit for BUSI 3107 (no longer offered) and ECON 3507 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4365 or ECON 4605 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3370 [0.5 credit]**The Economics of Migration**

An introduction to the economic aspects of migration. Topics include, among others: the economics of migration within countries; the economics of host country integration of immigrants; the impact of immigration on outcomes in the host country; the impacts of emigration on the home country.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3380 [0.5 credit]**The Economics of Gender and Ethnicity**

The impact of gender and ethnicity on labour-market outcomes. Topics may include: employment, work, earnings, and poverty; discrimination and policy responses; immigration; the economics of the household; gender and development; micro-credit; labour standards. Precludes additional credit for ECON 3100 (no longer offered) and ECON 3810 (no longer offered). Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3403 [0.5 credit]**Introduction to Public Economics: Expenditures**

The role and nature of the government sector in the economy, the theory of public goods, the equity and efficiency effects of public expenditures, voting rules and fiscal politics, techniques of public expenditure analysis, and intergovernmental fiscal relations. Precludes additional credit for ECON 3003 (no longer offered) and ECON 3408 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4402 (no longer offered) or ECON 4403. Prerequisite(s): ECON 1001 and ECON 1002 or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3405 [0.5 credit]**Introduction to Public Economics: Taxation**

The role and nature of the government sector in the economy, principles of taxation, tax equity, incidence and excess burden of taxes, structure of taxes in the economy, role of personal, corporate, sales and wealth taxes, fiscal stabilization policy, and the economics of public debt. Precludes additional credit for ECON 3003 (no longer offered) and ECON 3407 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4401 (no longer offered) or ECON 4404. Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3420 [0.5 credit]**Economic Theories of Federalism**

Economic dimensions of federalism, with reference to Canadian experience. Issues include: fiscal federalism; impact of federal economic policies on provincial economies; decentralization possibilities for fiscal and economic development policies; and consequences of policies such as provincial trade barriers and impediments to factor flows. Precludes additional credit for ECON 3206 (no longer offered). Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3450 [0.5 credit]**Political Economy in the Modern State**

An examination of the role of government in the economy, with emphasis on alternate forms of social coordination and the advantages and disadvantages of each form in the Canadian system. Precludes additional credit for ECON 3305 (no longer offered). Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3460 [0.5 credit]**Introduction to Health Economics**

Health as an economic good: demand and need; supply and cost. Public health and personal health care. Alternative health-care delivery systems: financing, performance, quality, and cost effectiveness. Preclusion: credit will not be given if taken concurrently with or after ECON 4460. Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3508 [0.5 credit]**Introduction to Economic Development**

A discussion of the principles of economic development. Application to the problems of the developing countries. Precludes additional credit for ECON 3603 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4507. Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3509 [0.5 credit]**Development Planning and Project Evaluation**

An introduction to the tools used in the planning and evaluation of development projects. Topics include the theory, application, strengths and limitations of cost-benefit analysis and competing approaches, and an examination of project evaluation techniques. Precludes additional credit for ECON 3604 (no longer offered). Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3510 [0.5 credit]**African Economic Development**

Domestic and international aspects of development problems and policies in the African context. Topics may include human resource development, growth and poverty reduction, domestic resource mobilization, the implications of ethnic diversity, governance, and institutions, and issues of trade, investment, aid, migration, and health. Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003. Lectures three hours a week.

ECON 3600 [0.5 credit]**Introduction to International Economics**

A discussion of theory and policy in international trade and finance. Intended for students planning to take only 0.5 credit in international economics at the 3000-level.

Precludes additional credit for ECON 3601 and ECON 3602. Credit will not be given if taken concurrently with or after ECON 4601 or ECON 4602.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3601 [0.5 credit]**Introduction to International Trade**

An extension of the basic principles of economics to international trade. Topics covered include the theory of international specialization, tariffs and other barriers to trade, trade liberalization and economic integration, international movements of labour and capital, trade and development.

Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4601.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3602 [0.5 credit]**International Monetary Problems**

A discussion of the theory and institutions of the international monetary system, and the related balance of payments problems of nation states.

Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4602.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3607 [0.5 credit]**Monetary and Financial Institutions**

The behaviour of financial intermediaries and institutions such as the Bank of Canada, banks and trust companies, and regulatory bodies such as the Canada Deposit Insurance Corporation and the Superintendent of Financial Institutions.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3706 [0.5 credit]**Applied Econometrics**

Introduction to applied econometric methods with emphasis on the use of the regression model for empirical research. Real-world examples are used extensively to illustrate key concepts. Hands-on computer exercises are an integral part of the course.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 3801 [0.5 credit]**Regional Economics**

Unequal distribution of economic activity between spatially defined regions. The pattern in Canada since World War II and the outlook for the future is evaluated, considering "natural" adjustment mechanisms and policy tools.

Precludes additional credit for ECON 3401 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3803 [0.5 credit]**The Economics of Natural Resources**

The application of economic analysis to questions concerning natural-resource use, management and conservation, as well as market failures and environmental effects. Policy problems relating to natural resources are discussed.

Precludes additional credit for ECON 3805 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3804 [0.5 credit]**Environmental Economics**

Microeconomic analysis of environmental issues.

Frameworks for measuring environmental costs and benefits. The efficiency of alternative pollution control policies. Applications include air and water pollution and global environmental problems such as ozone depletion and global warming.

Precludes additional credit for ECON 3806 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3807 [0.5 credit]**European Economic Integration**

A discussion of the theories of free trade areas and customs, monetary, and economic unions, and the related historical experience of Europe. Topics include: currency area and the euro, coordination of fiscal policy and the EU budget, common agricultural policy, labour mobility, and regional policy.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3808 [0.5 credit]**The Economics of Transition**

The transition from state ownership and central planning to mixed ownership structure with resource allocation by market mechanisms. "Classical socialism" is criticized and the processes of transition in countries of Central and Eastern Europe, the former Soviet Union, and Asia are compared.

Precludes additional credit for ECON 3700 (no longer offered), ECON 3701 (no longer offered), and ECON 3702 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3820 [0.5 credit]**Topics in Canadian Economic Policy**

Economic analysis applied to selected policy areas, issues or institutions. One or more of the following topics may be dealt with: decision-making by bureaucratic institutions, policy problems arising from poverty, the economics of natural resources and pollution, urban economics.

Precludes additional credit for ECON 3800 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3840 [0.5 credit]**An Economic Analysis of Law**

An introduction to the application of economic principles and methodology to a variety of legal problems with emphasis on the theory of property rights and the allocation of resources.

Precludes additional credit for ECON 3204 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3850 [0.5 credit]**Economics of Information and the Media**

An introduction to the economics of information and the media, with a focus on the analysis of production and distribution of information, the application of theory to selected communications-media industries in Canada, and the analysis of existing Canadian policies.

Precludes additional credit for ECON 3200 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4205 (no longer offered) or ECON 4850.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3856 [0.5 credit]**Housing Economics**

Examination of housing markets, housing finance, and government housing policy using the tools of microeconomics. Models of demand, supply, and market equilibrium emphasizing the special characteristics of housing, including heterogeneity, durability, and spatial fixity. Relationships to other goods and markets and the wider macroeconomy.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3860 [0.5 credit]**Agricultural Economics**

An examination of the agricultural industry in the national economy and in low-income societies, with emphasis on the working out of the basic forces that determine supply and demand for the industry, and the functional distribution of income among the factors of production.

Precludes additional credit for ECON 3406 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3864 [0.5 credit]**Transportation Economics**

Factors affecting demand for and supply of transportation services; demand elasticities and cost structures of various modes of transport; transportation service pricing. Topics may include transport demand forecasting, transportation investment and project appraisal, and the role of transport in economic development.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3870 [0.5 credit]**Comparative Economic Systems**

Analysis of the structure, institutions, and performance of alternative economic systems, including capitalism, socialism, and communism. Selected countries are studied as examples of these systems.

Precludes additional credit for ECON 4806 (no longer offered) and ECON 4807 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3878 [0.5 credit]**Contemporary Economic Issues**

Content may vary from year to year and is announced in advance of the registration period.

Lectures and/or seminars three hours a week.

ECON 3880 [0.5 credit]**Special Studies in Economics**

Content may vary from year to year and is announced in advance of the registration period.

Precludes additional credit for ECON 3402 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures and/or seminars three hours a week.

ECON 3900 [0.5 credit]**Research Methods in Economics**

The process of doing basic research in economics: development of the research proposal, finding and critically evaluating relevant literature, model development, methods for locating and collecting economic data, analytical methods, and writing mechanics. This course has a strong practical focus.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Seminars three hours a week.

ECON 3920 [0.5 credit]**Professional Practice of Economics**

Development of skills used by professional economists, including writing professional documents such as policy briefs and memos, data visualization, communication of economic ideas in non-technical terms, presentation skills, and team-based problem solving.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Seminars three hours a week.

ECON 3999 [0.0 credit]**Co-operative Work Term**

Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Honours Economics or Applied Economics Co-operative Education option, satisfactory completion of the Co-op preparation classes offered by the Co-operative Education Office, and permission of the Department.

ECON 4001 [0.5 credit]**Mathematical Analysis in Economics**

Analysis and algebra: set theory, sequences and series, quadratic forms, separation and fixed-point theorems. Static optimization: the Weierstrass, Lagrange, and Kuhn-Tucker theorems; convexity and quasi-convexity; the envelope theorem. Dynamic optimization: the Maximum Principle and Bellman's equation. Applications of these tools to economic theory.

Prerequisite(s): ECON 3001 with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4002 [0.5 credit]**Statistical Analysis in Economics**

Probability: including conditional probability, random variables and distributions, unconditional and conditional expectations. Distributions: including special distributions and their properties, and sampling distributions of estimators. Nonparametric methods and limit theorems; stochastic processes; simulation and bootstrap methods. Applications of these tools to economic theory.

Precludes additional credit for STAT 3500 (no longer offered), STAT 3508, and STAT 3558.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4004 [0.5 credit]**Operations Research I**

Linear programming, duality, sensitivity analysis, transportation and network problems. Both theory and a wide range of applications are studied.

Precludes additional credit for BUSI 2300 (no longer offered), MATH 3801, and SYSC 3200.

Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4005 [0.5 credit]**Operations Research II**

Dynamic programming, inventory models, queuing, simulation, and non-linear programming.

Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher, and ECON 2210 (or equivalent) or STAT 2605 or STAT 3502 with a grade of C- or higher.

Lectures three hours a week.

ECON 4020 [0.5 credit]**Advanced Microeconomic Theory**

Advanced theory of individual economic behaviour in production, consumption, and general equilibrium. Elementary tools of mathematics are employed in the exposition of most topics.

Precludes additional credit for ECON 4200 (no longer offered).

Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4020.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4021 [0.5 credit]**Advanced Macroeconomic Theory**

An introduction to advanced macroeconomic models. Topics may include analysis of business cycles, inflation, unemployment, economic growth, fiscal and monetary policy, consumption decisions of households, and investment decisions of firms.

Precludes additional credit for ECON 4201 (no longer offered).

Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4021.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4025 [0.5 credit]**Game Theory and Economics**

Analysis of strategic behaviour using methods of modern game theory. Topics include extensive-form and strategic-form representation of games, and solution concepts for games of complete and incomplete information such as Nash equilibrium, subgame perfect equilibrium, and perfect Bayesian equilibrium. Economic applications will be presented.

Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher or ECON 2002 (no longer offered) and ECON 2003 (no longer offered) each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2210 (or equivalent, or STAT 2507 or STAT 2606 or STAT 3502), which may be taken concurrently with ECON 4025.

Lectures three hours a week.

ECON 4026 [0.5 credit]**Macroeconomic Dynamics**

Dynamic models as applied to topics such as economic growth, business cycles, consumption, investment, inflation, and real-financial linkages. Empirical and/or policy issues may also be discussed.

Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4026.

Lectures three hours a week.

ECON 4030 [0.5 credit]**Economics of Uncertainty and Information**

Uncertainty, imperfect information, and asymmetric information in the allocation of resources and the performance of markets and alternative coordinating mechanisms.

Precludes additional credit for ECON 4006 (no longer offered) and ECON 4260 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4051 [0.5 credit]**Financial Asset Pricing**

Factors that drive security prices and models that attempt to account for aspects of security returns, including the generic arbitrage pricing model, the capital asset pricing model (CAPM), the consumption CAPM, and the intertemporal CAPM.

Precludes additional credit for BUSI 3500, ECON 3500 (no longer offered), BUSI 3502, ECON 3502 (no longer offered).

Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4052 [0.5 credit]**Corporate Financial Economics**

Optimization and corporate finance. Corporate governance and managerial compensation. Capital structure and the Modigliani-Miller theorem. Agency theory and asymmetric information. The issue of equity, debt, and other securities. Dividend policy. Investment and capital budgeting, NPV, and real options.

Precludes additional credit for BUSI 3500 (or ECON 3500, no longer offered) and BUSI 3502 (or ECON 3502, no longer offered).

Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4053 [0.5 credit]**Financial Market Modeling**

The modeling of the evolution of prices in (near) efficient markets and the evaluation of functions of these prices such as guarantees, options, warrants, futures, and other types of derivatives. Arrow-Debreu state-contingent claims. Notions of complete and incomplete markets. Precludes additional credit for ECON 4100 (no longer offered) and ECON 4504 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 3001 with a grade of C- or higher. Lectures three hours a week.

ECON 4056 [0.5 credit]**Insurance Economics**

The theory of insurance founded on probability and decision theory. The optimal design of insurance policies from a risk-sharing and an information economics perspective. Principal-agent problems including adverse selection, asymmetric information, and moral hazard with implications for insurance. The interaction between insurance and other markets. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent) with a grade of C- or higher. Lectures three hours a week.

ECON 4057 [0.5 credit]**Behavioural Financial Economics**

Market efficiency and the limits of arbitrage. Heuristics and biases identified by behavioural decision theorists and their effect on the behaviour of managers and investors. Behavioural theories of market trading volume and asset prices. Behavioural approaches to corporate financial economics problems. Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 3050 with a grade of C- or higher. Lectures three hours a week.

ECON 4108 [0.5 credit]**Behavioural Economics**

Major factors underlying economic behaviour, including various views of the role of rationality in economic analyses of individual decision-making and institutional design and a detailed treatment of behavioural heuristics and biases and their implications for nudging techniques that aim to improve economic outcomes. Prerequisite(s): ECON 2030 with a grade of C- or higher. Lectures three hours a week.

ECON 4109 [0.5 credit]**Experimental Economics**

An introduction to the use of and insights gained from both laboratory- and field-type experimental methods in economic research. Topics include analysis of individual rationality, performance of markets, and design of economic systems. In-class experiments are an integral part of the course. Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 with a grade of C- or higher. Lectures three hours a week.

ECON 4209 [0.5 credit]**Selected Topics in the History of Economic Thought**

The development of economic thought through time in relation to selected economic problems. Precludes additional credit for ECON 4105 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher, and ECON 2103 with a grade of C+ or higher. Also offered at the graduate level, with different requirements, as ECON 5209, for which additional credit is precluded. Lectures and/or seminars three hours a week.

ECON 4230 [0.5 credit]**Economic History**

The application of economic theory and quantitative techniques to selected topics in economic history, which may include historical patterns of growth and welfare, nineteenth-century globalization, technological change, the development of agriculture, industrialization, the Great Depression, and the origins of central banks. Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher. Also offered at the graduate level, with different requirements, as ECON 5230, for which additional credit is precluded. Lectures three hours a week.

ECON 4301 [0.5 credit]**Market Structure and Firm Behaviour**

Various theoretical and empirical studies of firm and market organization with emphasis on the pricing, advertising, investment and locational behaviour of firms in imperfectly competitive markets. Precludes additional credit for ECON 4300 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.

ECON 4302 [0.5 credit]**Competition and Regulatory Policy**

Public policies relating to competition and regulation. Topics may include: Ramsey pricing, peak-load pricing, cross-subsidization, access pricing (ECPR), multi-part pricing and price discrimination, predatory and targeted pricing, vertical restrictions, traditional regulation (including rate-of-return regulation), incentive regulation (including price caps), and the political economy of regulation. Precludes additional credit for ECON 4300 (no longer offered). Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher. Lectures three hours a week.

ECON 4309 [0.5 credit]**Applied Industrial Economics**

The empirical application of microeconomics, with special emphasis on the Canadian economy. Topics include: consumer demand, firm production and investment, and industrial and trade structure.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher.

Lectures three hours a week.

ECON 4360 [0.5 credit]**Labour Economics**

The application of price theory to the labour market. Topics include models of labour supply and labour demand, human capital and the economics of education, and unions and their impact on the labour market.

Precludes additional credit for ECON 4305 (no longer offered) and ECON 4306 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4365 [0.5 credit]**Industrial Relations**

Economic analysis of selected industrial relations and labour market policy problems. Topics include unionization, strike activity, the economics of occupational health and safety, pension policy, and the impact of new technology on the labour market.

Precludes additional credit for ECON 4605 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4403 [0.5 credit]**Public Economics: Expenditures**

A discussion of the theory of government expenditures and an examination of empirical attempts to quantify the theory. Examination of current topics such as expenditures and grants in the Canadian federation.

Precludes additional credit for ECON 4402 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4404 [0.5 credit]**Public Economics: Taxation**

A discussion of the theory of taxation and an examination of empirical attempts to quantify the theory. Some topics of current interest, such as the redistribution of income in Canada and tax reform, are examined.

Precludes additional credit for ECON 4401 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4407 [0.5 credit]**Project Evaluation**

Techniques and problems in the evaluation of public and private projects. Examination of alternative approaches to public decision-making including cost-benefit analysis, cost-effectiveness analysis, and multiple-objective frameworks. Case studies of projects in various areas such as natural resources, the environment, human resources, public services, and transportation.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher.

Lectures three hours a week.

ECON 4460 [0.5 credit]**Health Economics**

Economic analysis of the organization, financing, and utilization of health-care services. Topics include supply and demand of health care, the impact of private and social health insurance on demand, and policy issues in the provision of health care in Canada.

Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4507 [0.5 credit]**The Economics of Development**

An examination of some theoretical approaches to the economics of development, together with analysis of some economic policy issues of a largely internal character, such as intersectoral investment allocation, income distribution, unemployment, and investment in human development.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4508 [0.5 credit]**International Aspects of Economic Development**

An analysis of the international economic policy problems of development in Asia, Africa and Latin America, focusing on international trade, direct foreign investment, technological transfer, regional integration, debt and development financing, and international migration.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4601 [0.5 credit]**International Trade Theory and Policy**

International trade theory and its implications for economic policy. Topics such as determinants of trade and specialization, gains from trade and commercial policy, international factor mobility, growth and development.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4602 [0.5 credit]**International Monetary Theory and Policy**

International monetary theory and its implications for economic policy. Topics such as sources of disequilibrium and adjustment in the balance of payments under fixed versus flexible exchange rates, international capital movements, and international monetary reform.

Prerequisite(s): ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4670 [0.5 credit]**Monetary Theory and Policy**

The role of money and the monetary system in determining income, employment, and price level; techniques of monetary policy; the relationship between monetary and fiscal policy.

Precludes additional credit for ECON 4607 (no longer offered) and ECON 4608 (no longer offered).

Prerequisite(s): ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4700 [0.5 credit]**Measurement Economics**

National accounting and index numbers. Topics may include: the measurement of output and income, capital and depreciation, productivity, employment and unemployment, poverty and inequality, household production, pollution and resource depletion, and the balance of payments; price indexes; standard-of-living indexes; and international comparisons.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4706 [0.5 credit]**Econometrics I**

An introduction to econometric theory and analysis of the classical normal linear regression model. Topics include estimation methods, hypothesis testing, multicollinearity, indicator variables, heteroscedasticity, and an introduction to time-series methods.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4707 [0.5 credit]**Econometrics II**

An extension of ECON 4706. Topics include model specification, diagnostic checks, qualitative and limited dependent variables, panel data, and simultaneous equations models.

Prerequisite(s): ECON 4706 with a grade of C+ or higher, or STAT 3503 with a grade of C+ or higher.

Lectures three hours a week.

ECON 4708 [0.5 credit]**Economic Data Science - Analytics**

An introduction to methods of statistical and machine learning analytics for economic analysis. Tools relevant for both small and large data sets will be covered. Topics may include approaches to classification, dimension reduction strategies, and prediction models and tools.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2708 with a grade of C+ or higher; and ECON 4706 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week.

ECON 4709 [0.5 credit]**Economic Data Science - Applications**

Application of data science and machine learning methods to real-world economic problems. Students will apply their data science knowledge in hands-on projects to answer topical research questions. This course has a strong practical focus.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 4708 with a grade of C+ or higher.

Lectures three hours a week.

ECON 4713 [0.5 credit]**Time-Series Econometrics**

An introduction to the basic concepts and tools of time-series econometrics. Topics include stationary and non-stationary time series, identification, estimation and forecasting, unit root testing, cointegration analysis, error-correction models and ARCH models, together with relevant economic applications.

Precludes additional credit for ECON 4803 (no longer offered) and STAT 4603.

Prerequisite(s): ECON 4706 with a grade of C- or higher, or STAT 3503 with a grade of C- or higher.

Lectures three hours a week.

ECON 4714 [0.5 credit]**Advanced Topics in Applied Econometrics**

Advanced coverage of one or more areas of current interest in applied econometrics. An empirical research project may be required.

Includes: Experiential Learning Activity

Precludes additional credit for ECON 4804 (no longer offered).

Prerequisite(s): ECON 4706 with a grade of C+ or higher; and ECON 4707, which may be taken concurrently with ECON 4714.

Lectures three hours a week.

ECON 4800 [0.5 credit]**Spatial Economics**

Spatial dimensions of economic activity and organization. Theories of urban agglomeration effects, transport costs, forward and backward linkages, and associated spatial dynamics; empirical analysis of spatial economic clusters; effects of globalization and economic growth on the spatial structure of production and the associated policy response.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4850 [0.5 credit]**Advanced Economics of Information and Media**

The economics of information production, its distribution through broadcasting, publishing or the Internet, its exchange through telephone and e-mail networks, and its use in private and public organizations. An analysis of telecommunications, broadcasting, copyright, privacy, and Internet policy.

Precludes additional credit for ECON 4205 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4880 [0.5 credit]**Special Topics in Economics**

Selected advanced topics of interest to upper-year Honours Economics and Applied Economics students. Topics may vary from year to year and are announced in advance of the registration period.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; and ECON 3706 or ECON 4706, which may be taken concurrently with ECON 4880 or may be waived by permission of the Department.

Lectures and/or seminars three hours a week.

ECON 4903 [0.5 credit]**Tutorial in Economics**

An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.

Prerequisite(s): permission of the Department.

ECON 4904 [0.5 credit]**Tutorial in Economics**

An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.

Prerequisite(s): permission of the Department.

ECON 4905 [0.5 credit]**Honours Capstone Seminar**

The development of individual research projects in suitable economics topic areas with the exchange of results at each stage through in-class discussions and written and oral reports and culminating in a major research paper by each course registrant.

Includes: Experiential Learning Activity

Precludes additional credit for ECON 4890, ECON 4900 (no longer offered), ECON 4901, and ECON 4902.

Prerequisite(s): ECON 3900 with a grade of C+ or higher, ECON 3920 with a grade of C+ or higher, and registration in an Honours Economics program.

Seminars three hours a week.

ECON 4908 [1.0 credit]**Honours Essay**

Students taking Honours in Economics or Applied Economics may write an Honours essay during their final year. This essay counts for one credit. Students work under an individual faculty adviser.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Department.

ECON 4990 [0.5 credit]**Research and Writing in Economics**

Development of fundamental research and writing skills pertinent to the discipline of economics. Writing summary reviews of economics texts of increasing sophistication; writing up empirical and/or theoretical results of increasing complexity.

Prerequisite(s): registration in the Post-Baccalaureate Diploma in Economics program and/or permission of the Department.

Seminars three hours a week, tutorials one and a half hours a week.

Engineering

This section presents the requirements for programs in:

- Aerospace Engineering - Bachelor of Engineering Stream A: Aerodynamics, Propulsion and Vehicle Performance
- Aerospace Engineering - Bachelor of Engineering Stream B: Aerospace Structures, Systems and Vehicle Design
- Aerospace Engineering - Bachelor of Engineering Stream C: Aerospace Electronics and Systems
- Aerospace Engineering - Bachelor of Engineering Stream D: Space Systems Design
- Architectural Conservation and Sustainability Engineering - Bachelor of Engineering
- Architectural Conservation and Sustainability Engineering - Bachelor of Engineering Stream A: Structural
- Architectural Conservation and Sustainability Engineering - Bachelor of Engineering Stream B: Environmental
- Biomedical and Electrical Engineering Bachelor of Engineering

- Biomedical and Mechanical Engineering Bachelor of Engineering
- Civil Engineering Bachelor of Engineering
- Communications Engineering Bachelor of Engineering
- Computer Systems Engineering Bachelor of Engineering
- Electrical Engineering Bachelor of Engineering
- Engineering Physics Bachelor of Engineering
- Environmental Engineering Bachelor of Engineering
- Mechanical Engineering Bachelor of Engineering
- Software Engineering Bachelor of Engineering
- Sustainable and Renewable Energy Stream A: Smart Technologies for Power Generation and Distribution Bachelor of Engineering
- Sustainable and Renewable Energy Stream B: Efficient Energy Generation and Conversion Bachelor of Engineering

Program Requirements

Course Categories for Engineering Programs

The following categories of courses are used in defining the programs.

Basic Science Electives

Courses in this classification must be chosen from among those listed as acceptable for the current academic year. The list is published annually on the engineering academic support website: carleton.ca/engineering/uas. The list will change from year to year and only courses on the list valid in the year the course is taken, or courses for which formal approval of the Faculty has been obtained can be used as credit toward an engineering degree. Courses not on the list may be used to fulfill a Basic Science elective requirement with the permission of the Faculty of Engineering and Design and provided all other specified course requirements are met. Note that access to courses on the list is not guaranteed and may depend on space availability and the satisfaction of other requirements including, for example, course prerequisites.

Complementary Studies Electives

Courses in this classification must be chosen from among those listed as acceptable for the current academic year. The list is published annually on the engineering academic support website: carleton.ca/engineering/uas. The list will change from year to year and only courses on the list valid in the year the course is taken, or courses for which formal approval of the Faculty has been obtained can be used as credit toward an engineering degree. English as a Second Language courses are not acceptable for use as Complementary Studies electives in any engineering program. Courses not on the list may be used to fulfill a Complementary Studies elective requirement with the permission of the Faculty of Engineering and Design and provided all other specified course requirements are met. Registration in CUOL or online course sections is not acceptable. Note that access to courses on the list is not guaranteed and may depend on space availability and the satisfaction of other requirements including, for example, course prerequisites.

Communications Electives for Communications Engineering

ELEC 4503 [0.5]	Radio Frequency Lines and Antennas
ELEC 4505 [0.5]	Telecommunication Circuits
ELEC 4506 [0.5]	Computer-Aided Design of Circuits and Systems
ELEC 4509 [0.5]	Communication Links
ELEC 4702 [0.5]	Fiber Optic Communications
SYSC 4607 [0.5]	Wireless Communications

Computer Science Electives for Software Engineering

The list of computer science (COMP) electives for software engineering degree is published annually on the engineering academic support website: carleton.ca/engineering/uas. The list will change from year to year and only courses on the list valid in the year the course is taken, or courses for which formal approval of the Faculty has been obtained, can be used as credit toward the Software Engineering degree.

Aerospace Engineering Bachelor of Engineering

Students in Aerospace Engineering must satisfy the requirements for one of the following streams:

Aerospace Engineering - Bachelor of Engineering Stream A: Aerodynamics, Propulsion and Vehicle Performance (21.0 credits)

First Year

1. a) 4.0 credits in:	4.0
CHEM 1101 [0.5]	Chemistry for Engineering Students
ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management
ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics
ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	
2. 0.5 credit in	Complementary Studies Electives	0.5
3. 0.5 credit in	Basic Science Electives	0.5

Second Year

4. a) 5.0 credits in:	5.0
AERO 2001 [0.5]	Aerospace Engineering Graphical Design

ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
ELEC 3605 [0.5]	Electrical Engineering
MAAE 2101 [0.5]	Engineering Dynamics
MAAE 2202 [0.5]	Mechanics of Solids I
MAAE 2300 [0.5]	Fluid Mechanics I
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer
MAAE 2700 [0.5]	Engineering Materials
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third Year

5. 5.5 credits in: 5.5

AERO 3002 [0.5]	Aerospace Design and Practice
AERO 3700 [0.5]	Aerospace Materials
CCDP 2100 [0.5]	Communication Skills for Engineering Students
ECOR 3800 [0.5]	Engineering Economics
MAAE 3004 [0.5]	Dynamics of Machinery
MAAE 3202 [0.5]	Mechanics of Solids II
MAAE 3300 [0.5]	Fluid Mechanics II
MAAE 3400 [0.5]	Applied Thermodynamics
MAAE 3500 [0.5]	Feedback Control Systems
MATH 3705 [0.5]	Mathematical Methods I
SYSC 3600 [0.5]	Systems and Simulation

Fourth Year

6. 3.5 credits from: 3.5

AERO 4003 [0.5]	Aerospace Systems Design
AERO 4302 [0.5]	Aerodynamics and Heat Transfer
AERO 4306 [0.5]	Aerospace Vehicle Performance
AERO 4308 [0.5]	Aircraft Stability and Control
MAAE 4907 [1.0]	Engineering Design Project
ECOR 4995 [0.5]	Professional Practice

7. 1.0 credit in 4000-level Mechanical and Aerospace Engineering (MAAE, AERO, or MECH) 1.0

8. 0.5 credit from: 0.5

AERO 4402 [0.5]	Aerospace Propulsion
AERO 4442 [0.5]	Transatmospheric and Spacecraft Propulsion
AERO 4607 [0.5]	Rotorcraft Aerodynamics and Performance

9. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

Aerospace Engineering - Bachelor of Engineering Stream B: Aerospace Structures, Systems and Vehicle Design (21.0 credits)

First year

1. a) 4.0 credits in: 4.0

CHEM 1101 [0.5]	Chemistry for Engineering Students
ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management
ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics

ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II
ECOR 1057 [0.0]	Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

3. 0.5 credit in Basic Science Electives 0.5

Second year

4. a) 5.0 credits in: 5.0

AERO 2001 [0.5]	Aerospace Engineering Graphical Design
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
ELEC 3605 [0.5]	Electrical Engineering
MAAE 2101 [0.5]	Engineering Dynamics
MAAE 2202 [0.5]	Mechanics of Solids I
MAAE 2300 [0.5]	Fluid Mechanics I
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer
MAAE 2700 [0.5]	Engineering Materials
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

5. 5.5 credits in: 5.5

AERO 3002 [0.5]	Aerospace Design and Practice
AERO 3101 [0.5]	Lightweight Structures
AERO 3700 [0.5]	Aerospace Materials
CCDP 2100 [0.5]	Communication Skills for Engineering Students
ECOR 3800 [0.5]	Engineering Economics
MAAE 3004 [0.5]	Dynamics of Machinery
MAAE 3202 [0.5]	Mechanics of Solids II
MAAE 3300 [0.5]	Fluid Mechanics II
MAAE 3500 [0.5]	Feedback Control Systems
MATH 3705 [0.5]	Mathematical Methods I
SYSC 3600 [0.5]	Systems and Simulation

Fourth year

6. 3.5 credits in: 3.5

AERO 4003 [0.5]	Aerospace Systems Design
AERO 4602 [0.5]	Introductory Aeroelasticity
AERO 4608 [0.5]	Composite Materials
ECOR 4995 [0.5]	Professional Practice
MAAE 4102 [0.5]	Materials: Strength and Fracture

MAAE 4907 [1.0]	Engineering Design Project	
7. 1.0 credits in	4000-level Mechanical and Aerospace Engineering (MAAE, AERO, or MECH)	1.0
8. 0.5 credits from		0.5
AERO 4609 [0.5]	Joining of Materials	
MECH 4103 [0.5]	Fatigue and Fracture Analysis	
MECH 4104 [0.5]	Vibration Analysis	
MECH 4604 [0.5]	Finite Element Methods	
9. 0.5 credit in	Complementary Studies Electives	0.5
Total Credits		21.0

Aerospace Engineering - Bachelor of Engineering Stream C: Aerospace Electronics and Systems (21.0 credits)

First year

1. a) 4.0 credits in:		4.0
CHEM 1101 [0.5]	Chemistry for Engineering Students	
ECOR 1041 [0.25]	Computation and Programming	
ECOR 1042 [0.25]	Data Management	
ECOR 1043 [0.25]	Circuits	
ECOR 1044 [0.25]	Mechatronics	
ECOR 1045 [0.25]	Statics	
ECOR 1046 [0.25]	Mechanics	
ECOR 1047 [0.25]	Visual Communication	
ECOR 1048 [0.25]	Dynamics	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	
2. 0.5 credit in	Complementary Studies Electives	0.5
3. 0.5 credit in	Basic Science Elective	0.5

Second year

4. a) 5.0 credits in:		5.0
AERO 2001 [0.5]	Aerospace Engineering Graphical Design	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
ELEC 2501 [0.5]	Circuits and Signals	
ELEC 2507 [0.5]	Electronics I	
ELEC 2607 [0.5]	Switching Circuits	
MAAE 2101 [0.5]	Engineering Dynamics	
MAAE 2202 [0.5]	Mechanics of Solids I	
MAAE 2700 [0.5]	Engineering Materials	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio	
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Third year

5. 5.5 credits in:		5.5
AERO 3002 [0.5]	Aerospace Design and Practice	
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
ECOR 3800 [0.5]	Engineering Economics	
ELEC 3105 [0.5]	Electromagnetic Fields	
ELEC 3500 [0.5]	Digital Electronics	
ELEC 3509 [0.5]	Electronics II	
ELEC 3909 [0.5]	Electromagnetic Waves	
MAAE 2300 [0.5]	Fluid Mechanics I	
MAAE 3500 [0.5]	Feedback Control Systems	
MATH 3705 [0.5]	Mathematical Methods I	
SYSC 3600 [0.5]	Systems and Simulation	

Fourth year

6. 3.5 credits in:		3.5
AERO 4003 [0.5]	Aerospace Systems Design	
AERO 4504 [0.5]	Avionics Systems	
ECOR 4995 [0.5]	Professional Practice	
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer	
MAAE 4907 [1.0]	Engineering Design Project	
SYSC 3501 [0.5]	Communication Theory	
7. 1.5 credits from:	4000-level AERO, MAAE or MECH, or	1.5
AERO 3240 [0.5]	Orbital Mechanics	
AERO 3841 [0.5]	Spacecraft Design I	
ELEC 4502 [0.5]	Microwave Circuits	
ELEC 4503 [0.5]	Radio Frequency Lines and Antennas	
ELEC 4505 [0.5]	Telecommunication Circuits	
ELEC 4506 [0.5]	Computer-Aided Design of Circuits and Systems	
ELEC 4509 [0.5]	Communication Links	
ELEC 4600 [0.5]	Radar and Navigation	
ELEC 4609 [0.5]	Integrated Circuit Design and Fabrication	
ELEC 4703 [0.5]	Solar Cells	
ELEC 4706 [0.5]	High-Speed Electronics: Circuits and Systems	
ELEC 4707 [0.5]	Analog Integrated Electronics	
ELEC 4708 [0.5]	Advanced Digital Integrated Circuit Design	
ELEC 4709 [0.5]	Integrated Sensors	
SYSC 4205 [0.5]	Image Processing for Medical Applications	
SYSC 4600 [0.5]	Digital Communications	
SYSC 4607 [0.5]	Wireless Communications	
8. 0.5 credit in	Complementary Studies Electives	0.5
Total Credits		21.0

Aerospace Engineering - Bachelor of Engineering Stream D: Space Systems Design (21.0 credits)

First year

1. a) 4.0 credits in:		4.0
CHEM 1101 [0.5]	Chemistry for Engineering Students	
ECOR 1041 [0.25]	Computation and Programming	
ECOR 1042 [0.25]	Data Management	
ECOR 1043 [0.25]	Circuits	

ECOR 1044 [0.25]	Mechatronics	
ECOR 1045 [0.25]	Statics	
ECOR 1046 [0.25]	Mechanics	
ECOR 1047 [0.25]	Visual Communication	
ECOR 1048 [0.25]	Dynamics	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	

- 2. 0.5 credit in** Complementary Studies Electives 0.5
3. 0.5 credit in Basic Science Electives 0.5

Second year

- 4. a) 4.5 credits in:** 4.5

AERO 2001 [0.5]	Aerospace Engineering Graphical Design	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
MAAE 2101 [0.5]	Engineering Dynamics	
MAAE 2202 [0.5]	Mechanics of Solids I	
MAAE 2300 [0.5]	Fluid Mechanics I	
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer	
MAAE 2700 [0.5]	Engineering Materials	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio	
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- 5. 0.5 credit in** Complementary Studies Electives 0.5

Third year

- 6. 5.5 credits in:** 5.5

AERO 3002 [0.5]	Aerospace Design and Practice	
AERO 3240 [0.5]	Orbital Mechanics	
AERO 3841 [0.5]	Spacecraft Design I	
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
ECOR 3800 [0.5]	Engineering Economics	
ELEC 3909 [0.5]	Electromagnetic Waves	
MAAE 3004 [0.5]	Dynamics of Machinery	
MAAE 3300 [0.5]	Fluid Mechanics II	
MAAE 3500 [0.5]	Feedback Control Systems	
MATH 3705 [0.5]	Mathematical Methods I	
SYSC 3600 [0.5]	Systems and Simulation	

Fourth year

- 7. 4.0 credits in:** 4.0

AERO 4442 [0.5]	Transatmospheric and Spacecraft Propulsion	
AERO 4446 [0.5]	Heat Transfer for Aerospace Applications	

AERO 4540 [0.5]	Spacecraft Attitude Dynamics and Control	
AERO 4842 [0.5]	Spacecraft Design II	
ECOR 4995 [0.5]	Professional Practice	
ELEC 4509 [0.5]	Communication Links	
MAAE 4907 [1.0]	Engineering Design Project	

- 8. 1.5 credits from** 4000-level MAAE, AERO or MECH, 1.5
or AERO 3101, AERO 3700, ELEC 4503, ELEC 4600, ELEC 4709

Total Credits **21.0**

Architectural Conservation and Sustainability Engineering - Bachelor of Engineering (21.5 credits)

First year

- 1. a) 4.5 credits in:** 4.5

ARCH 1000 [0.5]	Introduction to Architecture	
CHEM 1101 [0.5]	Chemistry for Engineering Students	
ECOR 1041 [0.25]	Computation and Programming	
ECOR 1042 [0.25]	Data Management	
ECOR 1043 [0.25]	Circuits	
ECOR 1044 [0.25]	Mechatronics	
ECOR 1045 [0.25]	Statics	
ECOR 1046 [0.25]	Mechanics	
ECOR 1047 [0.25]	Visual Communication	
ECOR 1048 [0.25]	Dynamics	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	

- 2. 0.5 credit in** Basic Science Electives 0.5

Second year

- 3. a) 5.5 credits in:** 5.5

ARCC 2202 [0.5]	Architectural Technology 1	
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
CDNS 2400 [0.5]	Heritage Places and Practices in Canada	
CIVE 2200 [0.5]	Mechanics of Solids I	
CIVE 2700 [0.5]	Civil Engineering Materials	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
ENVE 1001 [0.5]	Architecture and the Environment	
MAAE 2300 [0.5]	Fluid Mechanics I	
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio	
Third year		
4. 5.5 credits in:		5.5
ACSE 3201 [0.5]	Introduction to Building Performance Simulation	
ARCC 2203 [0.5]	Architectural Technology 3	
ENVE 4105 [0.5]	Green Building Design	
CIVE 3203 [0.5]	Introduction to Structural Analysis	
CIVE 3204 [0.5]	Introduction to Structural Design	
CIVE 3205 [0.5]	Design of Structural Steel Components	
CIVE 3206 [0.5]	Design of Reinforced Concrete Components	
CIVE 3207 [0.5]	Historic Site Recording and Assessment	
CIVE 3209 [0.5]	Building Science	
CIVE 4202 [0.5]	Wood Engineering	
ECOR 3800 [0.5]	Engineering Economics	
Fourth year		
5. 4.0 credits in:		4.0
ACSE 4101 [0.5]	Introduction to Structural Assessment of Historic Masonry Buildings	
ARCH 4200 [0.5]	Architectural Conservation Philosophy and Ethics	
CIVE 4601 [0.5]	Building Pathology and Rehabilitation	
CIVE 4918 [1.0]	Design Project	
ECOR 4995 [0.5]	Professional Practice	
ENVE 4106 [0.5]	Indoor Environmental Quality	
ENVE 4107 [0.5]	Building Services Engineering	
6. 1.5 credits from:		1.5
CIVE 3202 [0.5]	Mechanics of Solids II	
CIVE 3208 [0.5]	Geotechnical Mechanics	
CIVE 4200 [0.5]	Matrix Analysis of Framed Structures	
CIVE 4201 [0.5]	Finite Element Methods in Civil Engineering	
CIVE 4302 [0.5]	Reinforced and Prestressed Concrete Design	
CIVE 4303 [0.5]	Urban Planning	
CIVE 4307 [0.5]	Municipal Hydraulics	
CIVE 4308 [0.5]	Behaviour and Design of Steel Structures	
CIVE 4400 [0.5]	Construction/Project Management	
CIVE 4403 [0.5]	Masonry Design	
CIVE 4407 [0.5]	Municipal Engineering	
CIVE 4500 [0.5]	Computer Methods in Civil Engineering	
CIVE 4614 [0.5]	Building Fire Safety	
CIVE 4907 [1.0]	Engineering Research Project	
CIVE 4917 [0.5]	Undergraduate Directed Study	
ENVE 3003 [0.5]	Water Resources Engineering	
ENVE 4003 [0.5]	Air Pollution and Emissions Control	
ENVE 4200 [0.5]	Climate Change and Engineering	
MECH 4407 [0.5]	Heating and Air Conditioning	

SREE 4002 [0.5]	Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics	
Total Credits		21.5

Note: Students admitted starting from fall 2019 are not eligible to select either the Structural or Environmental stream of the program.

Architectural Conservation and Sustainability Engineering Bachelor of Engineering

Architectural Conservation and Sustainability Engineering students with an admission and catalog term prior fall 2019 must satisfy the requirements for one of the following streams:

Architectural Conservation and Sustainability Engineering - Bachelor of Engineering Stream A: Structural (22.0 credits)

First year		
1. 5.5 credits in:		5.5
ARCH 1000 [0.5]	Introduction to Architecture	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
ECOR 1010 [0.5]	Introduction to Engineering	
ECOR 1101 [0.5]	Mechanics I	
ECOR 1606 [0.5]	Problem Solving and Computers	
ENVE 1001 [0.5]	Architecture and the Environment	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
Second year		
2. 5.5 credits in:		5.5
ARCC 2202 [0.5]	Architectural Technology 1	
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
CDNS 2400 [0.5]	Heritage Places and Practices in Canada	
CIVE 2004 [0.5]	GIS, Surveying, CAD and BIM	
CIVE 2200 [0.5]	Mechanics of Solids I	
CIVE 2700 [0.5]	Civil Engineering Materials	
ECOR 2606 [0.5]	Numerical Methods	
ENVE 2001 [0.5]	Process Analysis for Environmental Engineering	
MAAE 2300 [0.5]	Fluid Mechanics I	
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
Third year		
3. 5.5 credits in:		5.5
ARCC 2203 [0.5]	Architectural Technology 3	
ARCC 3202 [0.5]	Architectural Technology 4	
CIVE 3202 [0.5]	Mechanics of Solids II	
CIVE 3203 [0.5]	Introduction to Structural Analysis	

CIVE 3204 [0.5]	Introduction to Structural Design	
CIVE 3205 [0.5]	Design of Structural Steel Components	
CIVE 3206 [0.5]	Design of Reinforced Concrete Components	
CIVE 3207 [0.5]	Historic Site Recording and Assessment	
CIVE 3209 [0.5]	Building Science	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
ECOR 3800 [0.5]	Engineering Economics	
Fourth year		
4. 4.0 credits in:		4.0
ARCH 4200 [0.5]	Architectural Conservation Philosophy and Ethics	
CIVE 4202 [0.5]	Wood Engineering	
CIVE 4601 [0.5]	Building Pathology and Rehabilitation	
CIVE 4918 [1.0]	Design Project	
ECOR 4995 [0.5]	Professional Practice	
ENVE 4105 [0.5]	Green Building Design	
ENVE 4106 [0.5]	Indoor Environmental Quality	
5. 1.5 credits from:		1.5
CIVE 4200 [0.5]	Matrix Analysis of Framed Structures	
CIVE 4201 [0.5]	Finite Element Methods in Civil Engineering	
CIVE 4302 [0.5]	Reinforced and Prestressed Concrete Design	
CIVE 4303 [0.5]	Urban Planning	
CIVE 4308 [0.5]	Behaviour and Design of Steel Structures	
CIVE 4400 [0.5]	Construction/Project Management	
CIVE 4403 [0.5]	Masonry Design	
CIVE 4500 [0.5]	Computer Methods in Civil Engineering	
CIVE 4614 [0.5]	Building Fire Safety	
CIVE 4917 [0.5]	Undergraduate Directed Study	
ENVE 4003 [0.5]	Air Pollution and Emissions Control	
MECH 4407 [0.5]	Heating and Air Conditioning	
SREE 4002 [0.5]	Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics	
(See Note 2, below)		
Total Credits		22.0

Notes:

- For **Item 1** and students transferring into Architectural Conservation and Sustainability Engineering (Structural or Environmental Stream), students in good academic standing and who have successfully completed CHEM 1101 while registered in another engineering program may replace CHEM 1001 and CHEM 1002 with CHEM 1101 plus one 0.5 credit course from the Basic Science Electives list.
- For Item 5 in the Structural Stream, CIVE 4907 may replace 1.0 credit.

Architectural Conservation and Sustainability Engineering - Bachelor of Engineering Stream B: Environmental (22.0 credits)

First year

1. 5.5 credits in:		5.5
ARCH 1000 [0.5]	Introduction to Architecture	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
ECOR 1010 [0.5]	Introduction to Engineering	
ECOR 1101 [0.5]	Mechanics I	
ECOR 1606 [0.5]	Problem Solving and Computers	
ENVE 1001 [0.5]	Architecture and the Environment	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	

Second year

2. 5.5 credits in:		5.5
ARCC 2202 [0.5]	Architectural Technology 1	
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
CDNS 2400 [0.5]	Heritage Places and Practices in Canada	
CIVE 2004 [0.5]	GIS, Surveying, CAD and BIM	
CIVE 2200 [0.5]	Mechanics of Solids I	
CIVE 2700 [0.5]	Civil Engineering Materials	
ECOR 2606 [0.5]	Numerical Methods	
ENVE 2001 [0.5]	Process Analysis for Environmental Engineering	
MAAE 2300 [0.5]	Fluid Mechanics I	
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	

Third year

3. 5.5 credits in:		5.5
ARCC 2203 [0.5]	Architectural Technology 3	
ARCC 3202 [0.5]	Architectural Technology 4	
CIVE 3204 [0.5]	Introduction to Structural Design	
CIVE 3207 [0.5]	Historic Site Recording and Assessment	
CIVE 3209 [0.5]	Building Science	
CIVE 4307 [0.5]	Municipal Hydraulics	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
ECOR 3800 [0.5]	Engineering Economics	
ENVE 3001 [0.5]	Water Treatment Principles and Design	
ENVE 3002 [0.5]	Environmental Engineering Systems Modeling	
ENVE 3004 [0.5]	Contaminant and Pollutant Transport in the Environment	

Fourth year

4. 5.0 credits in:		5.0
ARCH 4200 [0.5]	Architectural Conservation Philosophy and Ethics	

CIVE 4601 [0.5]	Building Pathology and Rehabilitation	
ECOR 4995 [0.5]	Professional Practice	
ENVE 4005 [0.5]	Wastewater Treatment Principles and Design	
ENVE 4101 [0.5]	Waste Management	
ENVE 4104 [0.5]	Environmental Planning and Impact Assessment	
ENVE 4105 [0.5]	Green Building Design	
ENVE 4106 [0.5]	Indoor Environmental Quality	
ENVE 4918 [1.0]	Design Project	
5. 0.5 credit from:		0.5
CIVE 4201 [0.5]	Finite Element Methods in Civil Engineering	
CIVE 4303 [0.5]	Urban Planning	
CIVE 4400 [0.5]	Construction/Project Management	
CIVE 4500 [0.5]	Computer Methods in Civil Engineering	
ENVE 3003 [0.5]	Water Resources Engineering	
ENVE 4003 [0.5]	Air Pollution and Emissions Control	
ENVE 4917 [0.5]	Undergraduate Directed Study	
MECH 4401 [0.5]	Power Plant Analysis	
MECH 4403 [0.5]	Power Generation Systems	
MECH 4406 [0.5]	Heat Transfer	
MECH 4407 [0.5]	Heating and Air Conditioning	
SREE 4002 [0.5]	Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics	
Total Credits		22.0

Notes:

- For **Item 1** and students transferring into Architectural Conservation and Sustainability Engineering (Structural or Environmental Stream), students in good academic standing and who have successfully completed CHEM 1101 while registered in another engineering program may replace CHEM 1001 and CHEM 1002 with CHEM 1101 plus one 0.5 credit course from the Basic Science Electives list.

Biomedical and Electrical Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.5 credits in:		4.5
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
ECOR 1041 [0.25]	Computation and Programming	
ECOR 1042 [0.25]	Data Management	
ECOR 1043 [0.25]	Circuits	
ECOR 1044 [0.25]	Mechatronics	
ECOR 1045 [0.25]	Statics	
ECOR 1046 [0.25]	Mechanics	
ECOR 1047 [0.25]	Visual Communication	
ECOR 1048 [0.25]	Dynamics	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:		
ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	
2. 0.5 credit in	Complementary Studies Electives.	0.5
Second year		
3. a) 5.0 credits in:		5.0
BIOL 1103 [0.5]	Foundations of Biology I	
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
ELEC 2501 [0.5]	Circuits and Signals	
ELEC 2507 [0.5]	Electronics I	
ELEC 2607 [0.5]	Switching Circuits	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
SYSC 2006 [0.5]	Foundations of Imperative Programming	
SYSC 2510 [0.5]	Probability, Statistics and Random Processes for Engineers	
b) Successful completion of		
ECOR 2995 [0.0]	Engineering Portfolio	
Third year		
4. 4.5 credits in:		4.5
ELEC 3105 [0.5]	Electromagnetic Fields	
ELEC 3500 [0.5]	Digital Electronics	
ELEC 3909 [0.5]	Electromagnetic Waves	
SYSC 3006 [0.5]	Computer Organization	
SYSC 3203 [0.5]	Bioelectrical Systems	
SYSC 3501 [0.5]	Communication Theory	
SYSC 3610 [0.5]	Biomedical Systems, Modeling, and Control	
SYSC 4201 [0.5]	Ethics, Research Methods and Standards for Biomedical Engineering	
ECOR 3800 [0.5]	Engineering Economics	
5. 0.5 credit from:		0.5
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2005 [0.5]	Human Biology	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
BIOL 2303 [0.5]	Microbiology	
BIOL 3306 [0.5]	Human Anatomy and Physiology	
BIOL 4309 [0.5]	Studies in Human Performance	
BIOL 4319 [0.5]	Studies in Exercise Physiology	
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2204 [0.5]	Organic Chemistry II	
OR (with permission of the department)		
0.5 credit in BIOL, BIOC or CHEM		
6. 0.5 credit from:		0.5
ELEC 3908 [0.5]	Physical Electronics	
SYSC 2004 [0.5]	Object-Oriented Software Development	

SYSC 2010 [0.5]	Programming Project	
Fourth year		
7. 2.0 credits in:		2.0
ECOR 4995 [0.5]	Professional Practice	
ELEC 4601 [0.5]	Microprocessor Systems	
SYSC 4203 [0.5]	Bioinstrumentation and Signals	
SYSC 4405 [0.5]	Digital Signal Processing	
8. 1.0 credit in:		1.0
SYSC 4907 [1.0]	Engineering Project	
9. 0.5 credit from the list in Item 5		0.5
10. 1.0 credit from:		1.0
ELEC 4709 [0.5]	Integrated Sensors	
SYSC 4202 [0.5]	Clinical Engineering	
SYSC 4205 [0.5]	Image Processing for Medical Applications	
OR		
0.5 credit in BIOM at the 5000 level		
11. 0.5 credit from SYSC or ELEC course at the 3000 level or above		0.5
OR		
0.5 credit in BIOM at the 5000 level		
12. 0.5 credit in Complementary Studies Electives.		0.5
Total Credits		21.0

Biomedical and Mechanical Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.5. credits in:		4.5
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
ECOR 1041 [0.25]	Computation and Programming	
ECOR 1042 [0.25]	Data Management	
ECOR 1043 [0.25]	Circuits	
ECOR 1044 [0.25]	Mechatronics	
ECOR 1045 [0.25]	Statics	
ECOR 1046 [0.25]	Mechanics	
ECOR 1047 [0.25]	Visual Communication	
ECOR 1048 [0.25]	Dynamics	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	

2. 0.5 credit in Complementary Studies Electives		0.5
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Second year

3. a) 4.5 credits in:		4.5
BIOL 1103 [0.5]	Foundations of Biology I	
MAAE 2001 [0.5]	Engineering Graphical Design	
MAAE 2101 [0.5]	Engineering Dynamics	
MAAE 2202 [0.5]	Mechanics of Solids I	

MAAE 2300 [0.5]	Fluid Mechanics I	
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer	
MAAE 2700 [0.5]	Engineering Materials	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
b) Successful completion of		
ECOR 2995 [0.0]	Engineering Portfolio	
4. 0.5 credit in Complementary Studies Electives		0.5

Third year

5. 6.0 credits in:		6.0
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
ECOR 3800 [0.5]	Engineering Economics	
ELEC 3605 [0.5]	Electrical Engineering	
MAAE 3004 [0.5]	Dynamics of Machinery	
MAAE 3202 [0.5]	Mechanics of Solids II	
MAAE 3500 [0.5]	Feedback Control Systems	
MATH 3705 [0.5]	Mathematical Methods I	
MECH 3002 [0.5]	Machine Design and Practice	
MECH 3310 [0.5]	Biofluid Mechanics	
MECH 3710 [0.5]	Biomaterials	
SYSC 3610 [0.5]	Biomedical Systems, Modeling, and Control	

Fourth year

6. 3.5 credits in:		3.5
ECOR 4995 [0.5]	Professional Practice	
MAAE 4907 [1.0]	Engineering Design Project	
MECH 4013 [0.5]	Biomedical Device Design	
MECH 4210 [0.5]	Biomechanics	
MECH 4406 [0.5]	Heat Transfer	
SYSC 4201 [0.5]	Ethics, Research Methods and Standards for Biomedical Engineering	

7. 0.5 credit in MAAE, MECH or AERO at the 4000 level, SYSC 4202 [0.5], SYSC 4203 [0.5]		0.5
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8. 1.0 credits from:		1.0
BIOL 2005 [0.5]	Human Biology	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
CHEM 2203 [0.5]	Organic Chemistry I	

OR (with permission of the department)

1.0 credit in BIOL, BIOC or CHEM

Total Credits		21.0
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Civil Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.5 credits in:		4.5
CHEM 1101 [0.5]	Chemistry for Engineering Students	
ECOR 1041 [0.25]	Computation and Programming	
ECOR 1042 [0.25]	Data Management	
ECOR 1043 [0.25]	Circuits	
ECOR 1044 [0.25]	Mechatronics	
ECOR 1045 [0.25]	Statics	

ECOR 1046 [0.25]	Mechanics	
ECOR 1047 [0.25]	Visual Communication	
ECOR 1048 [0.25]	Dynamics	
ERTH 2404 [0.5]	Engineering Geoscience	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:		
ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	
2. 0.5 credit in	Complementary Studies Elective	0.5
Second year		
3. a) 5.0 credits in:		5.0
CCDP 2100 [0.5]	Communication Skills for Engineering Students	
CIVE 2004 [0.5]	GIS, Surveying, CAD and BIM	
CIVE 2101 [0.5]	Engineering Mechanics	
CIVE 2200 [0.5]	Mechanics of Solids I	
CIVE 2700 [0.5]	Civil Engineering Materials	
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments	
MAAE 2300 [0.5]	Fluid Mechanics I	
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
b) Successful completion of		
ECOR 2995 [0.0]	Engineering Portfolio	
Third year		
4. 5.0 credits in:		5.0
CIVE 3202 [0.5]	Mechanics of Solids II	
CIVE 3203 [0.5]	Introduction to Structural Analysis	
CIVE 3204 [0.5]	Introduction to Structural Design	
CIVE 3205 [0.5]	Design of Structural Steel Components	
CIVE 3206 [0.5]	Design of Reinforced Concrete Components	
CIVE 3208 [0.5]	Geotechnical Mechanics	
CIVE 3209 [0.5]	Building Science	
CIVE 3304 [0.5]	Transportation Engineering and Planning	
ECOR 3800 [0.5]	Engineering Economics	
MATH 3705 [0.5]	Mathematical Methods I	
5. 0.5 credit in	Complementary Studies Elective	0.5
Fourth year		
6. 3.5 credits in:		3.5
CIVE 4208 [0.5]	Geotechnical Engineering	
CIVE 4209 [0.5]	Highway Engineering	
CIVE 4400 [0.5]	Construction/Project Management	
CIVE 4407 [0.5]	Municipal Engineering	

CIVE 4918 [1.0]	Design Project	
ECOR 4995 [0.5]	Professional Practice	
7. 2.0 credits from:		2.0
ACSE 4101 [0.5]	Introduction to Structural Assessment of Historic Masonry Buildings	
CIVE 4200 [0.5]	Matrix Analysis of Framed Structures	
CIVE 4201 [0.5]	Finite Element Methods in Civil Engineering	
CIVE 4202 [0.5]	Wood Engineering	
CIVE 4301 [0.5]	Foundation Engineering	
CIVE 4302 [0.5]	Reinforced and Prestressed Concrete Design	
CIVE 4303 [0.5]	Urban Planning	
CIVE 4307 [0.5]	Municipal Hydraulics	
CIVE 4308 [0.5]	Behaviour and Design of Steel Structures	
CIVE 4403 [0.5]	Masonry Design	
CIVE 4500 [0.5]	Computer Methods in Civil Engineering	
CIVE 4614 [0.5]	Building Fire Safety	
CIVE 4907 [1.0]	Engineering Research Project	
CIVE 4917 [0.5]	Undergraduate Directed Study	
ENVE 3003 [0.5]	Water Resources Engineering	
ENVE 4105 [0.5]	Green Building Design	
ENVE 4200 [0.5]	Climate Change and Engineering	
Total Credits		21.0

Communications Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.0 credits in:		4.0
CHEM 1101 [0.5]	Chemistry for Engineering Students	
ECOR 1041 [0.25]	Computation and Programming	
ECOR 1042 [0.25]	Data Management	
ECOR 1043 [0.25]	Circuits	
ECOR 1044 [0.25]	Mechatronics	
ECOR 1045 [0.25]	Statics	
ECOR 1046 [0.25]	Mechanics	
ECOR 1047 [0.25]	Visual Communication	
ECOR 1048 [0.25]	Dynamics	
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:		
ECOR 1055 [0.0]	Introduction to Engineering Disciplines I	
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II	
ECOR 1057 [0.0]	Engineering Profession	
2. 0.5 credit in	Basic Science Electives	0.5
3. 0.5 credit in	Complementary Studies Electives	0.5
Second year		
4. a) 5.0 credits in:		5.0

CCDP 2100 [0.5]	Communication Skills for Engineering Students
ELEC 2501 [0.5]	Circuits and Signals
ELEC 2507 [0.5]	Electronics I
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics
SYSC 2004 [0.5]	Object-Oriented Software Development
SYSC 2006 [0.5]	Foundations of Imperative Programming
SYSC 2310 [0.5]	Introduction to Digital Systems
SYSC 2320 [0.5]	Introduction to Computer Organization and Architecture
SYSC 2510 [0.5]	Probability, Statistics and Random Processes for Engineers

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

5. 5.0 credits in: 5.0

ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
ECOR 3800 [0.5]	Engineering Economics
ELEC 3509 [0.5]	Electronics II
ELEC 3909 [0.5]	Electromagnetic Waves
SYSC 3310 [0.5]	Introduction to Real-Time Systems
SYSC 3500 [0.5]	Signals and Systems
SYSC 3503 [0.5]	Communication Theory II
SYSC 4502 [0.5]	Communications Software
SYSC 4504 [0.5]	Fundamentals of Web Development
SYSC 4602 [0.5]	Computer Communications

Fourth year

6. 3.5 credits in: 3.5

ECOR 4995 [0.5]	Professional Practice
SYSC 4405 [0.5]	Digital Signal Processing
SYSC 4604 [0.5]	Digital Communication Theory
SYSC 4607 [0.5]	Wireless Communications
SYSC 4700 [0.5]	Telecommunications Engineering
SYSC 4701 [0.5]	Communications Systems Lab
SYSC 4810 [0.5]	Introduction to Network and Software Security

7. 1.0 credit from: 1.0

SYSC 4907 [1.0]	Engineering Project
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8. 1.0 credit from: 1.0

SYSC 2010 [0.5]	Programming Project
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or SYSC or ELEC at the 3000 level or above (may include 1.0 credit in SYSC at the 5000 level)

9. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

Computer Systems Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.0 credits in: 4.0

CHEM 1101 [0.5]	Chemistry for Engineering Students
ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management

ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics
ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II
ECOR 1057 [0.0]	Engineering Profession

2. 0.5 credit in Basic Science Electives 0.5

3. 0.5 credit in Complementary Studies Electives 0.5

Second year

4. a) 5.0 credits in: 5.0

CCDP 2100 [0.5]	Communication Skills for Engineering Students
ELEC 2501 [0.5]	Circuits and Signals
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics
SYSC 2004 [0.5]	Object-Oriented Software Development
SYSC 2006 [0.5]	Foundations of Imperative Programming
SYSC 2100 [0.5]	Algorithms and Data Structures
SYSC 2310 [0.5]	Introduction to Digital Systems
SYSC 2320 [0.5]	Introduction to Computer Organization and Architecture
SYSC 2510 [0.5]	Probability, Statistics and Random Processes for Engineers

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

5. 5.5 credits in: 5.5

ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
ECOR 3800 [0.5]	Engineering Economics
ELEC 2507 [0.5]	Electronics I
SYSC 3010 [0.5]	Computer Systems Development Project
SYSC 3020 [0.5]	Introduction to Software Engineering
SYSC 3303 [0.5]	Real-Time Concurrent Systems
SYSC 3310 [0.5]	Introduction to Real-Time Systems
SYSC 3320 [0.5]	Computer Systems Design
SYSC 3501 [0.5]	Communication Theory
SYSC 3600 [0.5]	Systems and Simulation
SYSC 4001 [0.5]	Operating Systems

Fourth year

6. 2.5 credits in:	2.5
ECOR 4995 [0.5] Professional Practice	
SYSC 4310 [0.5] Computer Systems Architecture	
SYSC 4602 [0.5] Computer Communications	
SYSC 4805 [0.5] Computer Systems Design Lab	
SYSC 4810 [0.5] Introduction to Network and Software Security	
7. 1.0 credit from:	1.0
SYSC 4907 [1.0] Engineering Project (if supervisor is in Systems and Computer Engineering)	
ELEC 4907 [1.0] Engineering Project (if supervisor is in Electronics)	
8. 1.5 credits from:	1.5
MECH 4503 [0.5] An Introduction to Robotics	
or SYSC or ELEC at the 3000 level or above (may include 1.0 credit in SYSC at the 5000 level)	
9. 0.5 credit in Complementary Studies Electives	0.5
Total Credits	21.0

Electrical Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.0 credits in:	4.0
CHEM 1101 [0.5] Chemistry for Engineering Students	
ECOR 1041 [0.25] Computation and Programming	
ECOR 1042 [0.25] Data Management	
ECOR 1043 [0.25] Circuits	
ECOR 1044 [0.25] Mechatronics	
ECOR 1045 [0.25] Statics	
ECOR 1046 [0.25] Mechanics	
ECOR 1047 [0.25] Visual Communication	
ECOR 1048 [0.25] Dynamics	
MATH 1004 [0.5] Calculus for Engineering or Physics	
MATH 1104 [0.5] Linear Algebra for Engineering or Science	
PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion	

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0] Introduction to Engineering Disciplines I	
ECOR 1056 [0.0] Introduction to Engineering Disciplines II	
ECOR 1057 [0.0] Engineering Profession	
2. 0.5 credit in Complementary Studies Electives	0.5
3. 0.5 credit in Basic Science Electives	0.5

Second year

4. a) 5.0 credits in:	5.0
CCDP 2100 [0.5] Communication Skills for Engineering Students	
ELEC 2501 [0.5] Circuits and Signals	
ELEC 2507 [0.5] Electronics I	
ELEC 2602 [0.5] Electric Machines and Power	
ELEC 2607 [0.5] Switching Circuits	
MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics	

MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics	
MATH 3705 [0.5] Mathematical Methods I	
SYSC 2004 [0.5] Object-Oriented Software Development	
SYSC 2006 [0.5] Foundations of Imperative Programming	
b) Successful completion of	
ECOR 2995 [0.0] Engineering Portfolio	

Third year

5. 5.5 credits in:	5.5
ECOR 2050 [0.5] Design and Analysis of Engineering Experiments	
ECOR 3800 [0.5] Engineering Economics	
ELEC 3105 [0.5] Electromagnetic Fields	
ELEC 3500 [0.5] Digital Electronics	
ELEC 3509 [0.5] Electronics II	
ELEC 3907 [0.5] Engineering Project	
ELEC 3908 [0.5] Physical Electronics	
ELEC 3909 [0.5] Electromagnetic Waves	
SYSC 3006 [0.5] Computer Organization	
SYSC 3501 [0.5] Communication Theory	
SYSC 3600 [0.5] Systems and Simulation	

Fourth year

6. 1.5 credits in:	1.5
ECOR 4995 [0.5] Professional Practice	
ELEC 4601 [0.5] Microprocessor Systems	
SYSC 4505 [0.5] Automatic Control Systems I	
7. 1.0 credit from:	1.0
ELEC 4907 [1.0] Engineering Project (if supervisor is in Electronics)	
SYSC 4907 [1.0] Engineering Project (if supervisor is in Systems and Computer Engineering)	
8. 2.0 credits from:	2.0
MECH 4503 [0.5] An Introduction to Robotics	
SYSC 3020 [0.5] Introduction to Software Engineering	
SYSC 3200 [0.5] Industrial Engineering	
ELEC 3508 [0.5] Power Electronics	
or ELEC OR SYSC at the 4000 level	
9. 0.5 credit from:	0.5
Basic Science Electives, or	
ENVE, CIVE, IDES, MAAE, AERO, MECH at the 2000 level or above, or	
MECH 4503 [0.5] An Introduction to Robotics	
SYSC 3020 [0.5] Introduction to Software Engineering	
SYSC 3200 [0.5] Industrial Engineering	
or any ELEC or SYSC at the 4000 level	
10. 0.5 credit in Complementary Studies Electives	0.5
Total Credits	21.0

Engineering Physics Bachelor of Engineering (21.0 credits)

First year

1. a) 4.5 credits in:	4.5
CHEM 1101 [0.5] Chemistry for Engineering Students	

ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management
ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics
ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science
PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0] Introduction to Engineering Disciplines I

ECOR 1056 [0.0] Introduction to Engineering Disciplines II

ECOR 1057 [0.0] Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

Second year

3. a) 5.5 credits in: 5.5

ELEC 2501 [0.5] Circuits and Signals

ELEC 2507 [0.5] Electronics I

MAAE 2400 [0.5] Thermodynamics and Heat Transfer

MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics

MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics

MATH 3705 [0.5] Mathematical Methods I

PHYS 2202 [0.5] Wave Motion and Optics

PHYS 2604 [0.5] Modern Physics I

SYSC 2004 [0.5] Object-Oriented Software Development

SYSC 2006 [0.5] Foundations of Imperative Programming

CCDP 2100 [0.5] Communication Skills for Engineering Students

b) Successful completion of

ECOR 2995 [0.0] Engineering Portfolio

Third year

4. 5.5 credits in: 5.5

ECOR 2050 [0.5] Design and Analysis of Engineering Experiments

ECOR 3800 [0.5] Engineering Economics

ELEC 2607 [0.5] Switching Circuits

ELEC 3105 [0.5] Electromagnetic Fields

ELEC 3907 [0.5] Engineering Project

ELEC 3908 [0.5] Physical Electronics

ELEC 3909 [0.5] Electromagnetic Waves

PHYS 3606 [0.5] Modern Physics II

PHYS 3701 [0.5] Elements of Quantum Mechanics

PHYS 3807 [0.5] Mathematical Physics I

SYSC 3600 [0.5] Systems and Simulation

Fourth year

5. 3.5 credits in: 3.5

ECOR 4995 [0.5] Professional Practice

ELEC 3500 [0.5] Digital Electronics

ELEC 3509 [0.5] Electronics II

ELEC 4908 [1.0] Engineering Physics Project

PHYS 4007 [0.5] Fourth-Year Physics Laboratory: Selected Experiments and Seminars

PHYS 4707 [0.5] Introduction to Quantum Mechanics I

6. 0.5 credit from: 0.5

PHYS 4203 [0.5] Physical Applications of Fourier Analysis

PHYS 4208 [0.5] Modern Optics

PHYS 4409 [0.5] Thermodynamics and Statistical Physics

PHYS 4508 [0.5] Solid State Physics

PHYS 4708 [0.5] Introduction to Quantum Mechanics II

PHYS 4807 [0.5] Statistical Data Analysis Techniques for Physics

7. 0.5 credit in ELEC at the 4000 level excluding: ELEC 4504, ELEC 4600, ELEC 4703, and ELEC 4705 0.5

8. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

Environmental Engineering

Bachelor of Engineering (21.0 credits)

First year

1. a) 4.5 credits in: 4.5

CHEM 1001 [0.5] General Chemistry I

CHEM 1002 [0.5] General Chemistry II

ECOR 1041 [0.25] Computation and Programming

ECOR 1042 [0.25] Data Management

ECOR 1043 [0.25] Circuits

ECOR 1044 [0.25] Mechatronics

ECOR 1045 [0.25] Statics

ECOR 1046 [0.25] Mechanics

ECOR 1047 [0.25] Visual Communication

ECOR 1048 [0.25] Dynamics

MATH 1004 [0.5] Calculus for Engineering or Physics

MATH 1104 [0.5] Linear Algebra for Engineering or Science

PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0] Introduction to Engineering Disciplines I

ECOR 1056 [0.0] Introduction to Engineering Disciplines II

ECOR 1057 [0.0] Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

Second year

3. a) 5.0 credits in: 5.0

BIOL 1103 [0.5] Foundations of Biology I

BIOL 1104 [0.5] Foundations of Biology II

CHEM 2800 [0.5] Foundations for Environmental Chemistry

CIVE 2200 [0.5]	Mechanics of Solids I
ENVE 2001 [0.5]	Process Analysis for Environmental Engineering
ERTH 2404 [0.5]	Engineering Geoscience
MAAE 2300 [0.5]	Fluid Mechanics I
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

4. 5.5 credits in: 5.5

CDDP 2100 [0.5]	Communication Skills for Engineering Students
CHEM 3800 [0.5]	The Chemistry of Environmental Pollutants
CIVE 2700 [0.5]	Civil Engineering Materials
CIVE 3208 [0.5]	Geotechnical Mechanics
CIVE 4307 [0.5]	Municipal Hydraulics
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
ECOR 3800 [0.5]	Engineering Economics
ENVE 3001 [0.5]	Water Treatment Principles and Design
ENVE 3002 [0.5]	Environmental Engineering Systems Modeling
ENVE 3003 [0.5]	Water Resources Engineering
ENVE 3004 [0.5]	Contaminant and Pollutant Transport in the Environment

Fourth year

5. 4.0 credits in: 4.0

ECOR 4995 [0.5]	Professional Practice
ENVE 4003 [0.5]	Air Pollution and Emissions Control
ENVE 4005 [0.5]	Wastewater Treatment Principles and Design
ENVE 4006 [0.5]	Contaminant Hydrogeology
ENVE 4101 [0.5]	Waste Management
ENVE 4104 [0.5]	Environmental Planning and Impact Assessment
ENVE 4918 [1.0]	Design Project

6. 1.0 credit from: 1.0

CIVE 3304 [0.5]	Transportation Engineering and Planning
CIVE 4208 [0.5]	Geotechnical Engineering
CIVE 4301 [0.5]	Foundation Engineering
CIVE 4303 [0.5]	Urban Planning
CIVE 4400 [0.5]	Construction/Project Management
ENVE 4002 [0.5]	Environmental Geotechnical Engineering
ENVE 4105 [0.5]	Green Building Design
ENVE 4106 [0.5]	Indoor Environmental Quality
ENVE 4200 [0.5]	Climate Change and Engineering
ENVE 4907 [1.0]	Engineering Research Project
ENVE 4917 [0.5]	Undergraduate Directed Study
MECH 4401 [0.5]	Power Plant Analysis
MECH 4403 [0.5]	Power Generation Systems

MECH 4406 [0.5]	Heat Transfer
MECH 4407 [0.5]	Heating and Air Conditioning
SYSC 3200 [0.5]	Industrial Engineering
SREE 3001 [0.5]	Sustainable and Renewable Energy Sources
SREE 4002 [0.5]	Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics

7. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

Mechanical Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.0 credits in: 4.0

CHEM 1101 [0.5]	Chemistry for Engineering Students
ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management
ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics
ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II
ECOR 1057 [0.0]	Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

3. 0.5 credit in Basic Science Electives 0.5

Second year

4. a) 5.0 credits in: 5.0

ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
ELEC 3605 [0.5]	Electrical Engineering
MAAE 2001 [0.5]	Engineering Graphical Design
MAAE 2101 [0.5]	Engineering Dynamics
MAAE 2202 [0.5]	Mechanics of Solids I
MAAE 2300 [0.5]	Fluid Mechanics I
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer
MAAE 2700 [0.5]	Engineering Materials
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

5. 5.5 credits in: 5.5

CCDP 2100 [0.5]	Communication Skills for Engineering Students
ECOR 3800 [0.5]	Engineering Economics
MAAE 3004 [0.5]	Dynamics of Machinery
MAAE 3202 [0.5]	Mechanics of Solids II
MAAE 3300 [0.5]	Fluid Mechanics II
MAAE 3400 [0.5]	Applied Thermodynamics
MAAE 3500 [0.5]	Feedback Control Systems
MATH 3705 [0.5]	Mathematical Methods I
MECH 3002 [0.5]	Machine Design and Practice
MECH 3700 [0.5]	Principles of Manufacturing
SYSC 3600 [0.5]	Systems and Simulation

Fourth year

6. 3.0 credits in: 3.0

ECOR 4995 [0.5]	Professional Practice
MAAE 4102 [0.5]	Materials: Strength and Fracture
MAAE 4907 [1.0]	Engineering Design Project
MECH 4003 [0.5]	Mechanical Systems Design
MECH 4406 [0.5]	Heat Transfer

7. 2.0 credits from: 2.0

ELEC 4504 [0.5]	Avionics Systems
ELEC 4602 [0.5]	Electrical Power Systems
4000-level Mechanical and Aerospace Engineering (MAAE, AERO or MECH)	

8. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

Software Engineering Bachelor of Engineering (21.0 credits)

First year

1. a) 4.0 credits in: 4.0

CHEM 1101 [0.5]	Chemistry for Engineering Students
ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management
ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics
ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science

PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
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b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II
ECOR 1057 [0.0]	Engineering Profession

2. 0.5 credit in Basic Science Electives 0.5

3. 0.5 credit in Complementary Studies Electives 0.5

Second year

4. a) 5.0 credits in: 5.0

CCDP 2100 [0.5]	Communication Skills for Engineering Students
COMP 1805 [0.5]	Discrete Structures I
COMP 2804 [0.5]	Discrete Structures II
ELEC 2501 [0.5]	Circuits and Signals
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
SYSC 2004 [0.5]	Object-Oriented Software Development
SYSC 2006 [0.5]	Foundations of Imperative Programming
SYSC 2100 [0.5]	Algorithms and Data Structures
SYSC 2310 [0.5]	Introduction to Digital Systems
SYSC 2320 [0.5]	Introduction to Computer Organization and Architecture

b) Successful completion of:

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

5. 5.0 credits in: 5.0

COMP 3005 [0.5]	Database Management Systems
ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
SYSC 3101 [0.5]	Programming Languages
SYSC 3110 [0.5]	Software Development Project
SYSC 3120 [0.5]	Software Requirements Engineering

SYSC 3303 [0.5]	Real-Time Concurrent Systems
SYSC 3310 [0.5]	Introduction to Real-Time Systems
SYSC 4001 [0.5]	Operating Systems
SYSC 4106 [0.5]	The Software Economy and Project Management

SYSC 4120 [0.5]	Software Architecture and Design
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6. 0.5 credit from: 0.5

ELEC 2507 [0.5]	Electronics I
ELEC 4705 [0.5]	Electronic Materials, Devices and Transmission Media

or 0.5 credit in Basic Science Electives

Fourth year

7. 2.0 credits in: 2.0

ECOR 4995 [0.5]	Professional Practice
SYSC 4101 [0.5]	Software Validation
SYSC 4806 [0.5]	Software Engineering Lab
SYSC 4810 [0.5]	Introduction to Network and Software Security

8. 1.0 credit in: 1.0

SYSC 4907 [1.0]	Engineering Project
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9. 1.0 credit from SYSC or ELEC courses at the 3000 level or above 1.0

10. 1.0 credit from the list in Item 9 1.0

or 1.0 credit in Computer Science Electives for Software Engineering

or 1.0 credit in SYSC at the 5000 level (with permission of the department)

11. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

**Sustainable and Renewable Energy Stream A:
Smart Technologies for Power Generation and
Distribution
Bachelor of Engineering (21.0 credits)**

First year

1. a) 4.0 credits in: 4.0

CHEM 1101 [0.5]	Chemistry for Engineering Students
ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management
ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics
ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II
ECOR 1057 [0.0]	Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

3. 0.5 credit in Basic Science Electives 0.5

Second year

4. a) 5.0 credits in: 5.0

ELEC 2501 [0.5]	Circuits and Signals
ELEC 2507 [0.5]	Electronics I
ELEC 2602 [0.5]	Electric Machines and Power
ELEC 2607 [0.5]	Switching Circuits
ENVE 2001 [0.5]	Process Analysis for Environmental Engineering
MAAE 2300 [0.5]	Fluid Mechanics I
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics
SYSC 2006 [0.5]	Foundations of Imperative Programming

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

5. 5.5 credits in: 5.5

ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
CCDP 2100 [0.5]	Communication Skills for Engineering Students
ECOR 3800 [0.5]	Engineering Economics
ELEC 3105 [0.5]	Electromagnetic Fields
ELEC 3508 [0.5]	Power Electronics

ELEC 4602 [0.5]	Electrical Power Systems
SREE 3001 [0.5]	Sustainable and Renewable Energy Sources
SREE 3002 [0.5]	Electrical Distribution Systems
SREE 3003 [0.5]	Sustainable and Renewable Electricity Generation
SYSC 3006 [0.5]	Computer Organization
SYSC 3600 [0.5]	Systems and Simulation

Fourth year

6. 3.5 credits in: 3.5

ECOR 4995 [0.5]	Professional Practice
ELEC 4601 [0.5]	Microprocessor Systems
ELEC 4703 [0.5]	Solar Cells
SREE 4001 [0.5]	Efficient Energy Conversion
SREE 4002 [0.5]	Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics
SYSC 4505 [0.5]	Automatic Control Systems I
SYSC 4602 [0.5]	Computer Communications

7. 1.0 credit in: 1.0

SREE 4907 [1.0]	Energy Engineering Project
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8. 0.5 credit in Complementary Studies Electives 0.5

9. 0.5 credit in any 4000-level Engineering course for which prerequisites have been satisfied 0.5

Total Credits 21.0

**Sustainable and Renewable Energy Stream B:
Efficient Energy Generation and Conversion
Bachelor of Engineering (21.0 credits)**

First year

1. a) 4.0 credits in: 4.0

CHEM 1101 [0.5]	Chemistry for Engineering Students
ECOR 1041 [0.25]	Computation and Programming
ECOR 1042 [0.25]	Data Management
ECOR 1043 [0.25]	Circuits
ECOR 1044 [0.25]	Mechatronics
ECOR 1045 [0.25]	Statics
ECOR 1046 [0.25]	Mechanics
ECOR 1047 [0.25]	Visual Communication
ECOR 1048 [0.25]	Dynamics
MATH 1004 [0.5]	Calculus for Engineering or Physics
MATH 1104 [0.5]	Linear Algebra for Engineering or Science
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion

b) The Introduction to Engineering Disciplines requirement must be met through the successful completion of:

ECOR 1055 [0.0]	Introduction to Engineering Disciplines I
ECOR 1056 [0.0]	Introduction to Engineering Disciplines II
ECOR 1057 [0.0]	Engineering Profession

2. 0.5 credit in Complementary Studies Electives 0.5

3. 0.5 credit in Basic Science Electives 0.5

Second year

4. a) 5.0 credits in: 5.0

ECOR 2050 [0.5]	Design and Analysis of Engineering Experiments
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ELEC 3605 [0.5]	Electrical Engineering
ENVE 2001 [0.5]	Process Analysis for Environmental Engineering
MAAE 2001 [0.5]	Engineering Graphical Design
MAAE 2101 [0.5]	Engineering Dynamics
MAAE 2202 [0.5]	Mechanics of Solids I
MAAE 2300 [0.5]	Fluid Mechanics I
MAAE 2400 [0.5]	Thermodynamics and Heat Transfer
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics

b) Successful completion of

ECOR 2995 [0.0]	Engineering Portfolio
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Third year

5. 6.0 credits in: 6.0

CCDP 2100 [0.5]	Communication Skills for Engineering Students
ECOR 3800 [0.5]	Engineering Economics
ELEC 4602 [0.5]	Electrical Power Systems
MAAE 2700 [0.5]	Engineering Materials
MAAE 3300 [0.5]	Fluid Mechanics II
MAAE 3400 [0.5]	Applied Thermodynamics
MAAE 3500 [0.5]	Feedback Control Systems
MATH 3705 [0.5]	Mathematical Methods I
SREE 3001 [0.5]	Sustainable and Renewable Energy Sources
SREE 3002 [0.5]	Electrical Distribution Systems
SREE 3003 [0.5]	Sustainable and Renewable Electricity Generation
SYSC 3600 [0.5]	Systems and Simulation

Fourth year

6. 4.0 credits in: 4.0

ECOR 4995 [0.5]	Professional Practice
MAAE 4907 [1.0]	Engineering Design Project
MECH 4406 [0.5]	Heat Transfer
MECH 4408 [0.5]	Thermofluids and Energy Systems Design
SREE 4001 [0.5]	Efficient Energy Conversion
SREE 4002 [0.5]	Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics
SYSC 3200 [0.5]	Industrial Engineering

7. 0.5 credit in any 4000-level Engineering course for which prerequisites have been satisfied 0.5

8. 0.5 credit in Complementary Studies Electives 0.5

Total Credits 21.0

Regulations

The regulations presented in this section apply to all Bachelor of Engineering programs.

Academic Continuation Evaluation

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see Section 3.2

Academic Progression, in the *Academic Regulations of the University*), with the following additions and amendments:

1. In Engineering programs, all credits are included in the Major CGPA, making it identical to the Overall CGPA.
2. Students who are not assigned the status *Eligible to Continue* (EC) or *Academic Warning* (AW) will be required to leave the degree with either the status *Continue in Alternate* (CA) or *Dismissed from Program* (DP).

Graduation

Students in Engineering programs are covered by the common University regulations regarding graduation, with the following additions and amendments.

1. Students entering an Engineering program with Advanced Standing will receive transfer credit for at most ten of the credits required for their program.
2. To be eligible for graduation, the most recent grade in every course used to meet the requirements of the Bachelor of Engineering degree must be a passing grade.

Course Load

Regulations regarding Course Load and Overload can be found in the *Academic Regulations of the University* section of this Calendar. The normal course load in Engineering is defined as the number of credits required in the student's program for the current year status of the students. Since the programs in Engineering require more than 20.0 credits in total, the normal course load is more than 5.0 credits in some years of the program. Registration in more than this number of credits constitutes an overload.

Co-operative Education Programs

All Engineering programs are available with or without participation in the Co-operative Education option.

Year Status Prerequisites

Year Status in Engineering is used in some course prerequisites to limit access to only those students who have sufficient preparation. In particular, students will not have access to second, third or fourth year engineering, science or mathematics courses until they have achieved second year status. Similarly, to take some specific engineering, science and mathematics courses in third or fourth year, that year status must be achieved. For additional information on prerequisites, see the individual course descriptions.

2nd year status: Students may not continue into 2000-level (or higher) engineering courses unless all the following requirements are met:

1. Successful completion of all ECOR 1040 series of courses with a minimum grade of C-;
2. Successful completion of MATH 1004, MATH 1104, CHEM 1101 (or CHEM 1001 and CHEM 1002), and PHYS 1004 (or PHYS 1001 and PHYS 1002);
3. Successful completion of all English as a Second Language Requirements, and any additional requirements as determined in the admission process.

Students may not continue into 3000-level (or higher) engineering courses until they complete all first-year requirements (including ECOR 1055, ECOR 1056, and ECOR 1057).

3rd year status: Students may not take courses with third-year status in Engineering as a prerequisite until successful completion of all first-year requirements and at least 4.0 credits from the second-year requirements of their current program.

4th year status: Students may not take courses with fourth-year status in Engineering as a prerequisite until successful completion of all second-year requirements and at least 3.5 credits from the third-year requirements of their current program.

Time Limit

The Bachelor of Engineering degree must be completed within eight calendar years of initial registration. Students who do not complete their program requirements within this limit will be given the status *Continue in Alternate (CA)*.

Academic Appeals

The Engineering Committee on Admission and Studies handles all academic appeals.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Engineering: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Engineering program
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first and second year courses before beginning the first work term;
4. Students must be eligible for third-year standing when they return for a study term after their first work placement.

Students in all Bachelor of Engineering concentrations must successfully complete four (4) work terms to obtain the co-op designation.

Work Term Courses:

Aerospace Engineering and Mechanical Engineering,
Biomedical and Mechanical Engineering:

MAAE 3999 [0.0] Co-operative Work Term

Architectural Conservation and Sustainability Engineering:

CIVE 3999 [0.0] Co-operative Work Term
or ENVE 3999 [0.0] Co-operative Work Term

Civil Engineering:

CIVE 3999 [0.0] Co-operative Work Term

Communications Engineering, Computer Systems
Engineering and Software Engineering:

SYSC 3999 [0.0] Co-operative Work Term

Biomedical and Electrical Engineering, Electrical
Engineering and Engineering Physics:

ELEC 3999 [0.0] Co-operative Work Term

Environmental Engineering:

ENVE 3999 [0.0] Co-operative Work Term

Sustainable and Renewable Energy Engineering:

ELEC 3999 [0.0] Co-operative Work Term

MAAE 3999 [0.0] Co-operative Work Term

(depending on student's stream)

Work/Study Patterns

Aerospace Engineering, Architectural Conservation and Sustainability Engineering, Biomedical and Mechanical Engineering, Civil Engineering, Communications Engineering, Environmental Engineering, Mechanical Engineering, Sustainable and Renewable Energy Engineering

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer	**O	Summer	O/W	Summer	W	Summer	W		

Electrical Engineering, Engineering Physics

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer	**O	Summer	W	Summer	S	Summer	W		

Biomedical and Electrical Engineering, Computer Systems Engineering, Software Engineering

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer	W	Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average

required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Engineering (B. Eng.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include four prerequisite 4U courses: Advanced Functions, Chemistry, Physics, and one of Calculus and Vectors (recommended), or Biology, or Earth and Space Science. Although it is not an admission requirement, at least one 4U course in either English or French is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Successful applicants will have individual academic subjects, completed with grades of C- or higher, evaluated for academic standing, provided the academic work has been completed at another university or degree-granting college, or in another degree program at Carleton University.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Engineering degree;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above entrance requirements only establishes eligibility for admission to the program. Enrolment in the co-op option may be limited at the discretion of the department.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Aerospace Engineering (AERO) Courses

AERO 2001 [0.5 credit]

Aerospace Engineering Graphical Design

Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Aerospace-specific CAD (Computer-Aided Design) assignments including production of detail and assembly drawings from actual aerospace physical models.

Includes: Experiential Learning Activity

Also listed as MAAE 2001.

Prerequisite(s): Second-year status in Engineering.

Lectures and tutorials two hours a week, laboratory four hours a week.

AERO 3002 [0.5 credit]

Aerospace Design and Practice

Design approach and phases. Design integration. Influence of mission and other requirements on vehicle configuration. Trade-off studies, sizing and configuration layout. Flight vehicle loads, velocity-load factor diagram. Structural design: overall philosophy, role in design process, methods. Basic orbital mechanics; launch vehicle sizing.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2001 and third-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

AERO 3101 [0.5 credit]

Lightweight Structures

Structural concepts; theory of elasticity; bending, torsion and shear in thin-walled beams having single or multi-cell sections; work and energy principles; deformation and force analysis of advanced structures, including stiffened thin-wall panels; finite element methods. Stability and buckling of thin-walled structures.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 3202.

Lectures three hours a week; problem analysis one hour a week.

AERO 3240 [0.5 credit]

Orbital Mechanics

Review of translational kinematics and dynamics. Keplerian two-body problem: Kepler's laws, orbital elements, orbit determination. Orbital perturbations: oblateness of the Earth, atmospheric drag. Orbital maneuvers and interplanetary flights. Advanced topics.

Prerequisite(s): MAAE 2101.

Lectures three hours per week, tutorial one hour per week.

AERO 3700 [0.5 credit]

Aerospace Materials

Properties, behaviour and manufacturing methods for metals, polymers and ceramics used in aerospace applications. Specialty alloys for gas turbines. Properties and manufacture of aerospace composites. Behaviour of materials in space.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2700.

Lectures three hours a week; problem analysis one hour a week.

AERO 3841 [0.5 credit]

Spacecraft Design I

Design of spacecraft and spacecraft subsystems with emphasis on mission requirements and current design methods: spacecraft configuration, payload, structural, attitude control, thermal, power, and other related subsystems. Spacecraft integration and testing.

Includes: Experiential Learning Activity

Prerequisite(s): AERO 3240.

Lectures three hours a week, tutorials or laboratories three hours per week.

AERO 4003 [0.5 credit]

Aerospace Systems Design

Stress and deflection analysis; fatigue, safe life, damage tolerant design. Propulsion systems integration; landing gear; control and other subsystems. Mechanical component design. Airworthiness regulations and certification procedures. Weight and cost estimation and control. System reliability. Design studies of aircraft or spacecraft components.

Includes: Experiential Learning Activity

Prerequisite(s): AERO 3002 and fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

AERO 4009 [0.5 credit]

Aviation Management and Certification

Product development, quality control. Strategic organizational analysis and design. Airworthiness, type certification and planning, delegation of authority, airplane flight manual. Aerospace system design and safety.

Prerequisite(s): fourth-year status in Engineering or permission of the department.

Lectures three hours per week.

AERO 4300 [0.5 credit]

Acoustics and Noise Control

Behaviour of compressible fluids, sound waves and properties of sound sources; measurement of sound; human perception of sound; prediction methods based on energy considerations; sound propagation in realistic environments: outdoors, rooms, ducts; absorption and transmission loss, noise control; case studies.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering or by permission of department.

Lectures three hours a week.

AERO 4302 [0.5 credit]**Aerodynamics and Heat Transfer**

Differential equations of motion. Viscous and inviscid regions. Potential flow: superposition; thin airfoils; finite wings; compressibility corrections. Viscous flow: thin shear layer approximation; laminar layers; transition; turbulence modeling. Convective heat transfer: free versus forced convection; energy and energy integral equations; turbulent diffusion.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 3300 or MECH 3310.

Also offered at the graduate level, with different requirements, as MECH 5000, for which additional credit is precluded.

Lectures three hours a week, problem analysis two hours a week.

AERO 4304 [0.5 credit]**Computational Fluid Dynamics**

Governing equations of fluid motion (full & simplified). Discretization based on finite difference, finite volume, and finite element methods. Explicit and implicit integration schemes. Numerical stability. Numerical solutions of the Navier-Stokes equations: RANS, LES and DNS. Turbulence modeling. Programming-based assignments (convection/diffusion).

Prerequisite(s): (MAAE 3300 or MECH 3310), completion of or concurrent registration in AERO 4302 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

AERO 4306 [0.5 credit]**Aerospace Vehicle Performance**

Morphology of aircraft and spacecraft. Performance analysis of fixed wing aircraft: drag estimation, propulsion, take-off, climb and landing, endurance, payload/range, manoeuvres; operational economics. Performance analysis of rotor craft: rotor-blade motion, hovering and vertical ascent, forward flight, and autorotation. Rocket propulsion; escape velocity; orbital dynamics.

Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4308 [0.5 credit]**Aircraft Stability and Control**

Static stability and control: equilibrium requirements; longitudinal stability requirements; neutral points; manoeuvring flight; control forces and control requirements; lateral static stability certification requirements. Dynamic stability: axis systems; governing equations; phugoid and short period modes; lateral dynamic modes. Closed-loop control.

Prerequisite(s): MAAE 3500 and fourth-year status in Engineering.

Also offered at the graduate level, with different requirements, as MECH 5101, for which additional credit is precluded.

Lectures three hours a week.

AERO 4402 [0.5 credit]**Aerospace Propulsion**

Propulsion requirements, effects of Mach Number, altitude, and application; basic propeller theory; propeller, turboshaft, turbojet, turbofan and rocket; cycle analysis and optimization for gas turbine power plant; inter-relationships between thermodynamic, aerodynamic and mechanical designs; rocket propulsion; selection of aeroengines.

Precludes additional credit for MECH 4401.

Prerequisite(s): MAAE 2400, (MAAE 3300 or MECH 3310), and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

AERO 4442 [0.5 credit]**Transatmospheric and Spacecraft Propulsion**

Planetary/interplanetary environments and effects. Launch and spacecraft propulsion: liquid/solid/hybrid rockets, ram/scramjets, combined cycle engines, electrothermal, electromagnetic, electrostatic, nuclear, and propellantless propulsion. Trajectory analysis, multi-staging, separation dynamics. Advanced engine concepts.

Prerequisite(s): MAAE 2400, (MAAE 3300 OR MECH 3310) and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4446 [0.5 credit]**Heat Transfer for Aerospace Applications**

Fundamentals of heat transfer with emphasis on aerospace systems design. Conduction, convection and radiation modes of heat transfer. Radiation exchange between surfaces and view factors. Radiation in spacecraft thermal control. High speed flight and reentry heating.

Precludes additional credit for MECH 4406.

Prerequisite(s): MAAE 2400 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4504 [0.5 credit]**Avionics Systems**

RF engineering concepts. Aviation communication systems. Relative and absolute navigation; landing systems. Radar systems; weather radar. Aircraft systems integration; databus standards; electrical systems; power generation and distribution. Safety critical software. Electromagnetic compatibility and interference. Regulations and certification of avionic systems.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 4504.

Prerequisite(s): 4th year status in Engineering. Not open to students in Electrical Engineering, Computer Systems Engineering, Engineering Physics or Communications Engineering.

Lectures three hours a week.

AERO 4540 [0.5 credit]**Spacecraft Attitude Dynamics and Control**

Rigid body dynamics. The dynamic behavior of spacecraft. Environmental torques. The design of attitude control systems. Gravity gradient, spin, and dual spin stabilization. Attitude manoeuvres. The design of automatic control systems. Impacts of attitude stabilization techniques on mission performance.

Prerequisite(s): AERO 3240 and MAAE 3500 and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4602 [0.5 credit]**Introductory Aeroelasticity**

Review of structural behaviour of lifting surface elements; structural dynamics, Laplace Transforms, dynamic stability; modal analysis; flutter, Theodorsen's theory; flutter of a typical section; wing flutter, T-tail flutter, propeller whirl flutter; gust response; buffeting, limit cycle flutter.

Prerequisite(s): (MAAE 3300 or MECH 3310) and SYSC 3600 and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4607 [0.5 credit]**Rotorcraft Aerodynamics and Performance**

Rotorcraft history and fundamentals. Momentum theory: hover, axial climb and descent, autorotation, forward flight, momentum theory for coaxial and tandem rotors. Blade element analysis. Rotor airfoil aerodynamics. Rotor blade dynamics and trim. Helicopter performance, height-velocity curves, conceptual design. High-speed rotorcraft.

Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

AERO 4608 [0.5 credit]**Composite Materials**

Reinforcing mechanisms in composite materials; material properties. Strength and elastic constants of unidirectional composites; failure criteria. Analysis of laminated plates; bending and eigenvalue problems. Environmental effects and durability. Damage tolerance. Design of composite structures.

Prerequisite(s): MAAE 2202 and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4609 [0.5 credit]**Joining of Materials**

Design for joining: base material and component geometry. Selection of joining method and filler material; Adhesive bonding; Soldering; Brazing; Diffusion bonding; Resistance welding; Fusion welding (GTAW, EB, laser and plasma arc); Friction welding; NDE. Emphasis on Aerospace materials and applications.

Prerequisite(s): MAAE 2700 and fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

AERO 4842 [0.5 credit]**Spacecraft Design II**

System view of spacecraft. Requirements definition. Spacecraft payloads (remote sensing, imaging systems, astronomy instrumentation etc.). Exploration missions. Implications for systems and missions. Space system design case studies.

Includes: Experiential Learning Activity

Precludes additional credit for AERO 4802 (no longer offered).

Prerequisite(s): AERO 3841 and fourth-year status in Engineering.

Lectures three hours a week, tutorials or laboratories one hour per week.

Civil Engineering (CIVE) Courses**CIVE 2004 [0.5 credit]****GIS, Surveying, CAD and BIM**

Engineering geometry and spatial graphics. Fundamentals of surveys. Digital surveying tools; total station, GPS. Computer-Aided Drafting (CAD). Geographic Information Systems (GIS). Spatial referencing. Building Information Modelling (BIM). Integrated design using digital tools. Field exercises using software to process and evaluate spatial data.

Includes: Experiential Learning Activity

Prerequisite(s): Second-year status in Engineering or (GEOM 1004 for students in BSc in Geomatics).

Lectures three hours a week, problem analysis and laboratories three hours a week.

CIVE 2005 [0.5 credit]**Architectural Technology 2**

Technical issues involved in architectural design of buildings from ancient times to the present. Technological innovation and materials related to structural developments, and the organization and design of structures. Basic concepts of calculus, equilibrium, and mechanics of materials.

Precludes additional credit for Not eligible for use for Bachelor of Engineering degree requirements.

Prerequisite(s): ARCC 2202.

Lectures three hours a week, laboratory three hours a week.

CIVE 2101 [0.5 credit]**Engineering Mechanics**

Virtual work. Friction. Relative motion of particles. Kinematics of a rigid body: translation, rotation; general plane motion; absolute and relative motion. Kinetics of a rigid body: equations of motion; work-energy; impulse-momentum; conservation of momentum and energy.

Conservative forces and potential energy.

Precludes additional credit for MAAE 2101.

Prerequisite(s): MATH 1004, MATH 1104 and second-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

CIVE 2200 [0.5 credit]**Mechanics of Solids I**

Stress and strain. Stress-strain relationship: Hooke's law. Torsion of circular shafts. Bending moment and shear force distribution. Flexural stresses. Deflection. Shear stress in beams. Stresses in thin-walled cylinders. Transformation of 2D stress and strain: Mohr's circle. Buckling of columns.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 2202.

Prerequisite(s): MATH 1004 and second-year status in Engineering for B.Eng. or CIVE 2005 for B.A.S. with Concentration in Conservation and Sustainability.

Lectures three hours a week, problem analysis and laboratory three hours a week.

CIVE 2700 [0.5 credit]**Civil Engineering Materials**

Introduction to material science. Structure of atoms. Crystallography. Crystal Imperfections. Characteristics, behaviour and use of Civil Engineering materials: steel, concrete, asphalt, wood, polymers, composites. Specifications. Physical, chemical and mechanical properties. Quality control and material tests. Fatigue. Corrosion. Applications in construction and rehabilitation of structures.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 2700.

Prerequisite(s): second year status for students in an Engineering program or second year standing in a B.A.S. major in Conservation and Sustainability.

Lectures three hours a week, problem analysis and laboratory three hours a week.

CIVE 3202 [0.5 credit]**Mechanics of Solids II**

Shear flow. Definition of shear centre, Saint Venant and warping torsional constants. Behaviour, governing differential equations and solutions for torsion, beam-columns, lateral torsional buckling of doubly symmetric beams, axially loaded doubly symmetric, singly symmetric and asymmetric columns. Failure criterion, fatigue and fracture.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 3202.

Prerequisite(s): CIVE 2200.

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

CIVE 3203 [0.5 credit]**Introduction to Structural Analysis**

Concepts and assumptions for structural analysis: framed structures; joints; supports; compatibility and equilibrium; stability and determinacy; generalized forces and displacements. Principle of Virtual Work: unknown force calculations; influence lines. Complementary Virtual Work: displacement calculations, indeterminate analysis. Introduction to the Stiffness Method of Analysis.

Prerequisite(s): CIVE 2200 and MATH 1004.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3204 [0.5 credit]**Introduction to Structural Design**

Building systems and structural form. Design Philosophy and design process. Limit states design. National Building Code of Canada. Determination of dead, live, snow, wind, and earthquake loads.

Prerequisite(s): CIVE 2200.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3205 [0.5 credit]**Design of Structural Steel Components**

Introduction to CAN/CSA - S16, design and behaviour concepts; shear lag, block shear, local plate buckling, lateral torsional buckling, instantaneous centre, inelastic strength and stability. Design of tension members, axially loaded columns, beams, beam-columns, simple bolted and welded connections.

Prerequisite(s): CIVE 2200 and CIVE 2700.

Recommended prerequisite: CIVE 3204.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3206 [0.5 credit]**Design of Reinforced Concrete Components**

Introduction to CAN/CSA - A23.3; design and behaviour concepts; flexural analysis at service loads; shear, bond, Whitney stress block, under, over reinforced behaviour, ultimate strength. Flexural design of singly reinforced, doubly reinforced T-beams, one-way slabs. Shear design for beams. One-way, two-way slab systems, columns.

Prerequisite(s): CIVE 2200 and CIVE 2700.

Recommended prerequisite: CIVE 3204.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3207 [0.5 credit]**Historic Site Recording and Assessment**

Methods of heritage documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.

Includes: Experiential Learning Activity

Also listed as ARCN 4100.

Prerequisite(s): third-year status in B.Eng. in Architectural Conservation and Sustainability Engineering.

Lectures three hours a week, lab or field work two hours a week.

CIVE 3208 [0.5 credit]**Geotechnical Mechanics**

Soil composition and soil classification. Soil properties, compaction, seepage and permeability. Concepts of pore water pressure, capillary pressure and hydraulic head. Principle of effective stress, stress-deformation and strength characteristics of soils, consolidation, stress distribution with soils, and settlement. Laboratory testing.

Includes: Experiential Learning Activity

Also listed as EARTH 4107.

Prerequisite(s): third-year status in Engineering, or permission of the department. Additional recommended background: EARTH 2404 or equivalent.

Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 3209 [0.5 credit]**Building Science**

Building envelope design and analysis; applied heat transfer and moisture transport; solar radiation; hygrothermal modelling; control of rain, air, vapour, and heat; materials for wall, window, curtain wall, roof, and foundation systems; building envelope retrofit case studies; building code; envelope construction.

Prerequisite(s): MAAE2400 and third-year status in B.Eng. Architectural Conservation and Sustainability Engineering or in Civil Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3304 [0.5 credit]**Transportation Engineering and Planning**

Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion, human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods.

Also listed as GEOG 4304.

Prerequisite(s): third-year status in Engineering, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

CIVE 4200 [0.5 credit]**Matrix Analysis of Framed Structures**

Review of basic structural concepts. Betti's law and applications. Matrix flexibility method, flexibility influence coefficients. Development of stiffness influence coefficients. Stiffness method of analysis: beams; plane trusses and frames; space trusses and frames. Introduction to the finite element method.

Prerequisite(s): CIVE 3203.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4201 [0.5 credit]**Finite Element Methods in Civil Engineering**

Introduction to the theory and application of finite element methods. The relationship with virtual work, Rayleigh-Ritz, system of linear equations, polynomial interpolation, numerical integration, and theory of elasticity is explored. Isoparametric formulations of structural and plane elements are examined. Geotechnical and nonlinear problems are introduced.

Prerequisite(s): CIVE 2200 and fourth year status in engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4202 [0.5 credit]**Wood Engineering**

Structural design in timber. Properties, anatomy of wood, wood products, factors affecting strength and behaviour, strength evaluation and testing. Design of columns, beams and beam-columns. Design of trusses, frames, glulam structures, plywood components, formwork, foundations, connections and connectors. Inspection, maintenance and repair.

Prerequisite(s): CIVE 2200, CIVE 2700 and third-year status in B.Eng.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4208 [0.5 credit]**Geotechnical Engineering**

Strength of soils, steady state seepage, flownets and piping. Stress distribution in soils. Earth pressures: at rest, active and passive. Design of flexible and rigid retaining structures. Stability of excavations, slopes and embankments. Settlement of foundations. Bearing capacity of footings.

Prerequisite(s): CIVE 3208.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4209 [0.5 credit]**Highway Engineering**

Highway planning; highway location and geometric design; traffic engineering; highway capacity; soil classifications; subgrade and base materials; highway drainage; frost action; structural design of rigid and flexible pavements; highway economics and finance; maintenance and rehabilitation.

Prerequisite(s): Fourth year status in engineering.

Recommended prerequisites: CIVE 2004, CIVE 3304 and CIVE 3208.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4301 [0.5 credit]**Foundation Engineering**

A critical study of the theories in soil mechanics and their application to the solution of geotechnical engineering problems. Field investigations, laboratory and field testing, shallow foundations, special footings, mat foundations, pile foundations and excavations. Discussion of new methods and current research.

Prerequisite(s): CIVE 4208.

Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 4302 [0.5 credit]**Reinforced and Prestressed Concrete Design**

Reinforced concrete shear and torsion design. Two-way slab design by Direct Design and Equivalent Frame Method. Behaviour and design of slender reinforced concrete columns. Prestressed concrete concepts; flexural analysis and design; shear design; anchorage zone design; deflection and prestress loss determination.

Prerequisite(s): CIVE 3202, CIVE 3203 and CIVE 3206.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4303 [0.5 credit]**Urban Planning**

A systematic approach to urban planning; urban sprawl; data collection; forecasting; standards; space requirements; land use; zoning; transportation; land development; site selection; land capability; layout; evaluation; housing; urban renewal and new towns.

Prerequisite(s): fourth-year status in Engineering, second-year standing in B.A.S. (Urbanism), or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4307 [0.5 credit]**Municipal Hydraulics**

Fluid flow fundamentals. Hydraulics of pipe systems. Open channel flow. Prediction of sanitary and storm sewage, flow rates. Design of water distribution systems, culverts, sanitary and storm sewers. Pumps and measuring devices. Hydraulic and flow control structures.

Prerequisite(s): MAAE 2300.

Lectures three hours a week, problem analysis one and a half hours a week.

CIVE 4308 [0.5 credit]**Behaviour and Design of Steel Structures**

Behaviour and design of open web steel joists, steel and composite decks, composite beams and columns, stud girders, and plate girders. Design of moment connections, base plates and anchor bolts, and bracing connections. Stability of rigid and braced frames. Design for lateral load effects.

Prerequisite(s): CIVE 3205 and fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4400 [0.5 credit]**Construction/Project Management**

Systems approach to project planning and control. Analysis of alternative network planning methods: CPM, precedence and PERT; planning procedure; computer techniques and estimating; physical, economic and financial feasibility; implementation feedback and control; case studies.

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4403 [0.5 credit]**Masonry Design**

Introduction to structural design in masonry. Properties of masonry materials and assemblages. Behaviour and design of beams, walls and columns. Selected topics including veneer wall systems, differential movement, workmanship, specifications, inspection, maintenance and repair. Lowrise and highrise building design.

Prerequisite(s): CIVE 3204, CIVE 3206 and fourth-year status in Engineering or permission of the Department.

Also offered at the graduate level, with different requirements, as CIVE 5200, for which additional credit is precluded.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4407 [0.5 credit]**Municipal Engineering**

Introduction to fundamentals of municipal engineering.

Water quality: physical, chemical and biological parameters. Water treatment: softening mixing, flocculation, sedimentation, filtration, disinfection, fluoridation. Biological processes. Wastewater treatment: primary, secondary and tertiary treatment. Sludge disposal and wastewater reuse. Solid waste management.

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, problem analysis one and a half hours a week

CIVE 4500 [0.5 credit]**Computer Methods in Civil Engineering**

Advanced software development for Civil Engineering applications. Examples may be chosen from surveying, transportation, geotechnical and/or structural engineering. Software technologies include object-oriented programming, data base management, Internet-based applications and graphical user interfaces.

Prerequisite(s): Fourth-year status in Engineering.

Also offered at the graduate level, with different requirements, as CIVE 5602, for which additional credit is precluded.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4601 [0.5 credit]**Building Pathology and Rehabilitation**

Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures.

Includes: Experiential Learning Activity

Also listed as ARCN 4200.

Prerequisite(s): CIVE 3207 and fourth-year status in B.Eng. in Architectural Conservation and Sustainability Engineering.

Lectures three hours a week, lab/field work two hours a week.

CIVE 4614 [0.5 credit]**Building Fire Safety**

Understanding fire-structure interaction and the concepts of fire severity and resistance; behaviour of steel, concrete, and timber buildings exposed to fires; compartment fire dynamics; correlations and computer models to predict fire dynamics; fire retardants; laboratory-scale fire experiments; performance-based approach for building fire safety design.

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering, or permission of the Department.

Lectures three hours a week, problem analysis and laboratories one and one-half hours per week.

CIVE 4907 [1.0 credit]**Engineering Research Project**

A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 4917.

Prerequisite(s): fourth-year status in Engineering and permission of the department.

CIVE 4917 [0.5 credit]**Undergraduate Directed Study**

Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 4907.

Prerequisite(s): permission of the Department and completion of, or concurrent registration in, CIVE 4918. Self study.

CIVE 4918 [1.0 credit]**Design Project**

Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.

Includes: Experiential Learning Activity

Prerequisite(s): ECOR 3800 and fourth-year status in Engineering. Certain projects may have additional requirements.

Lectures two hours alternate weeks, problem analysis three hours a week.

Electronics (ELEC) Courses**ELEC 2501 [0.5 credit]****Circuits and Signals**

Properties of signals. Basic circuit elements: voltage and current sources. Kirchhoff's laws, linearity, superposition. Thevenin and Norton's theorems. Circuit simplification. AC steady-state analysis: impedance, admittance, phasors, frequency response. Transient response of RL and RC circuits: form of response, initial and final conditions. RLC circuits: resonance.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 3605.

Prerequisite(s): MATH 1005 (may be taken concurrently) and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2507 [0.5 credit]**Electronics I**

Qualitative semiconductor physics, leading to the diode equation. Diode applications. Operational amplifiers and their application in feedback configurations including active filters. Introduction to bipolar transistors and MOSFETs, analysis of biasing circuits. Transistor applications including small signal amplifiers.

Includes: Experiential Learning Activity

Precludes additional credit for OSS 2006, PLT 2006 (no longer offered).

Prerequisite(s): MATH 1005, ELEC 2501, and second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2602 [0.5 credit]**Electric Machines and Power**

Modeling and analysis of basic electric power systems. Single-phase and three-phase circuits: real and reactive power, per-phase analysis, power factor correction. Electro-mechanical energy conversion: operation, characteristics and analysis of transformers, DC-, induction-, and synchronous electric machines. Motor and generator operation.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1004 and ELEC 2501, and second-year status in Engineering.

Lectures 3 hours per week. Laboratory and problem analysis 3 hours per week alternate weeks.

ELEC 2607 [0.5 credit]**Switching Circuits**

Boolean algebra, gate, combinatorial circuits. DeMorgan notation, sum-of-product and product-of-sum forms. Logic arrays, PLAs and PALs. Flip-flops, latches, sequential circuits, state graphs and state minimization. Counters and controllers. Hazards. Asynchronous sequential circuits, race free assignment, realization.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2310.

Prerequisite(s): PHYS 1004 or PHYS 1002 and second-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 3105 [0.5 credit]**Electromagnetic Fields**

Vector calculus: gradient, divergence, curl, integration of vector fields. Electrostatics, magnetostatics. Boundary conditions. Poisson's and Laplace's equations: method of images, separation of variables, iterative method. Electric and magnetic properties of matter. Magnetic circuits. Lorentz force. Motional emf, electromagnetic induction. Maxwell's equations.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005, MATH 2004, and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3500 [0.5 credit]**Digital Electronics**

Digital circuit design using verilog and logic synthesis, the electronic properties of logic gates, electrical interfacing between logic families, asynchronous to synchronous interfacing, clock distribution and timing, VLSI design options. Students implement substantial circuits with field-programmable gate arrays.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2507 and ELEC 2607.

Lectures three hours a week, laboratory three hours a week.

ELEC 3508 [0.5 credit]**Power Electronics**

Power semiconductor devices: Thyristor, GTO, IGBT, SiC, GaN. Converter circuits: controlled AC to DC rectifiers, choppers, DC to AC inverters, AC voltage controllers. Protection of conversion circuits. Applications to high-efficiency control of electric machines and electromechanical energy conversion devices.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2507 and ELEC 2602.

Lectures three hours per week, laboratories/problem analysis three hours per week.

ELEC 3509 [0.5 credit]**Electronics II**

Introduction to semiconductor devices and ICs. DC, AC and switching properties of BJTs. Linear amplifiers; bandwidth considerations; two-port analysis. Large signal amplifiers; power amplifiers; transformerless circuits. Feedback and operational amplifiers; gain, sensitivity, distortion and stability. Filter design. Oscillators.

Includes: Experiential Learning Activity

Precludes additional credit for : ELEC 3509 may not be taken for credit by students in the Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering programs.

Prerequisite(s): ELEC 2507.

Lectures three hours a week, laboratory three hours a week.

ELEC 3605 [0.5 credit]**Electrical Engineering**

DC circuits: elements, sources, analysis. Single phase AC circuits: phasors, RLC circuits, real and reactive power, impedance, network analysis, three phase systems. Power transformers. DC motors: operation and characteristics. AC motors: single phase and three phase.

Precludes additional credit for ELEC 2501.

Prerequisite(s): MATH 1005 and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.

Lectures three hours a week, problem analysis 1.5 hours a week.

ELEC 3907 [0.5 credit]**Engineering Project**

Student teams work on open-ended projects based on previously acquired knowledge. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, a series of project reports, and oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2507, ELEC 2607, third year status in Engineering, and enrolment in the Electrical Engineering or Engineering Physics program.

Lecture two hours per week, laboratory six hours per week.

ELEC 3908 [0.5 credit]**Physical Electronics**

Fundamentals of device physics and operation of the pn junction, bipolar transistor and MOSFET. Basic integrated circuit processing and application to diodes, BJTs and MOSFETs. Correlation between processing, structure, operation and modeling. Consideration of parasitic and small-geometry effects, reliability and process variation.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 4705.

Prerequisite(s): ELEC 2507.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3909 [0.5 credit]**Electromagnetic Waves**

Maxwell's equations and EM wave solutions. Polarization. Poynting vector. EM waves in dielectrics and conductors; skin depth. Reflection and refraction. Standing waves. Fresnel relations, Brewster angle. Transmission lines. Line termination, basic impedance matching and transformation. Smith charts. Introduction to guided waves; slab waveguide.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3308.

Prerequisite(s): ELEC 3105 or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ELEC 4502 [0.5 credit]**Microwave Circuits**

Introduction to microwave semiconductor devices, microwave passive components, microwave integrated circuit technology, and microwave circuit measurements. Basic network theory and scattering matrix description of circuits. Design of matching networks, filters, amplifiers and oscillators at microwave frequencies.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 4503; may be taken concurrently.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4503 [0.5 credit]**Radio Frequency Lines and Antennas**

Introduction to distributed circuits, travelling and standing waves, reflection coefficient, SWR, impedance transformation, Smith charts. Introduction to transmission lines; coaxial, rectangular waveguide, resonators, optical fibers. Introduction to antennas; gain, directivity, effective area. Introduction to linear arrays.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3909.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4504 [0.5 credit]**Avionics Systems**

Electromagnetic spectrum. Air data sensing, display. Communications systems. Navigation and landing systems; ground-based, inertial and satellite systems. Airborne radar. Guidance, control for aircraft, autopilots; stability augmentation; active control; sensor requirements; display techniques. Aircraft power systems. Safety systems. Vehicle/systems integration, certification. Precludes additional credit for AERO 4504.

Prerequisite(s): fourth-year status in Engineering.

Not open to students in Electrical Engineering, Computer Systems Engineering, Engineering Physics or Communications Engineering.

Lecture three hours a week.

ELEC 4505 [0.5 credit]**Telecommunication Circuits**

A course of study of the commonly used circuit components in modern telecommunication systems. Both analog and digital systems are included. The design of the hardware is emphasized. Examples are drawn from broadcasting, telephony and satellite systems.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3509 and (SYSC 3501 or SYSC 3503).

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4506 [0.5 credit]**Computer-Aided Design of Circuits and Systems**

Basic principles of Computer-Aided Design tools used for analysis and design of communication circuits and systems. Frequency and time-domain analysis. Noise and distortion analysis. Transmission line effects. Sensitivity analysis and circuit performance optimization. Digital simulation.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4509 [0.5 credit]**Communication Links**

Fundamentals; decibel, intermodulation, 1dB compression, dynamic range, SNR, noise figure, noise temperature, antenna gain, EIRP, G/T. Line-of-sight links; receiver, diversity, fade margin. Satellite links; link calculations, multiple accessing, earth stations. Fiber links, fiber types, sources, detectors, systems.

Prerequisite(s): fourth-year status in Engineering or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 4600 [0.5 credit]**Radar and Navigation**

Radar: operation, minimum detectable signal, propagation effects. Surveillance Radars: Moving Target indicator and Pulse Doppler operation. Radio Navigation: pulsed and CW operation. Operational systems: Loran C., VOR/DME, TACAN, Global Positioning system. Inertial Navigation. Navigation Co-ordinate Systems. Techniques for determining best estimates of position.

Prerequisite(s): fourth-year status in Engineering or permission of the Department.

Lectures three hours a week, problem analysis 3 hours alternate weeks.

ELEC 4601 [0.5 credit]**Microprocessor Systems**

Interfacing aspects in microprocessor systems.

Microprocessors and bus structures, internal architecture, instruction set and pin functions. Memory interfacing, input-output, interrupts, direct memory accesses, special processors and multiprocessor systems.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3006 (no longer offered), SYSC 3320, SYSC 3601.

Prerequisite(s): ELEC 2607 and one of SYSC 2003 or SYSC 3003 (no longer offered) or SYSC 3006 or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4602 [0.5 credit]**Electrical Power Systems**

The electric power system. Components: power transformers and connections, transmission lines.

Analysis: balanced and unbalanced three-phase systems, symmetrical components, load flow, FACTS. Operation: frequency and voltage control, steady state and transient stability, fault protection. Distribution systems: utility, residential, commercial. Electrical safety: code, grounding/bonding.

Prerequisite(s): ELEC 2602.

Lectures three hours a week, problem analysis two hours a week.

ELEC 4609 [0.5 credit]**Integrated Circuit Design and Fabrication**

Introduction to nMOS IC design: static logic gates, noise margin, transmission gates, factors influencing switching speed, dynamic logic, input protection, output buffers, circuit simulation with SPICE. Laboratory work includes design and layout of a simple nMOS IC that is fabricated and returned for testing.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3500 or ELEC 3908.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4700 [0.5 credit]**The Physics and Modeling of Advanced Devices and Technologies**

Fabrication, operation and modeling of advanced devices for information technology. Topics: physics of materials, quantum mechanics of solids, optical transitions, physical analysis and models for state-of-the-art electronic/optical technologies and materials. Technologies: MOS and III-V based transistors, solid-state optical devices, MEMS and nano-technology based devices.

Prerequisite(s): ELEC 3908.

Lectures three hours a week, problem analysis two hours alternate weeks.

ELEC 4702 [0.5 credit]**Fiber Optic Communications**

Fundamentals of optoelectronics with application to fiber optic communications. Optical fibre: modes, losses, dispersion, splices, coupling to sources. Optical sources: LEDs, laser diodes. Optical detectors: photoconductor, pin and avalanche photodiodes. Optical receiver design. Fiber optic communications systems: intensity modulation/direct detection; coherent homodyne or heterodyne detection.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3908 and ELEC 3909.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4703 [0.5 credit]**Solar Cells**

Semiconductor band structure, photogeneration, the solar spectrum. Detailed analysis of monocrystalline silicon solar cells. Solar cells based on thin film materials: amorphous silicon, III-V materials, organics, titania-dye cells. Cells for concentrator systems. Photovoltaic power systems. Solar cells for building envelopes.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2501 and ELEC 2507 and fourth-year status in Sustainable and Renewable Energy Engineering, or ELEC 2501 and ELEC 2507 and fourth-year status in Engineering with permission of the instructor.

Lectures three hours per week, laboratories/problem analysis three hours alternate weeks.

ELEC 4704 [0.5 credit]**Nanoscale Technology and Devices**

Engineering at the nanoscale. Quantum confinement and the effect of scale. Analysis tools: microscopy, spectroscopy. Fabrication: thin films, nanoparticles, nanotubes, graphene, organics. Structures and properties: quantum wells, nanocrystals, nanostructuring. Applications and devices: electronics, optoelectronics, photonics.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3908, ELEC 3909.

Lectures three hours a week, problem analysis 1.5 hours a week.

ELEC 4705 [0.5 credit]**Electronic Materials, Devices and Transmission Media**

Review of solid-state theory, conductors, semiconductors, superconductors, insulators, and optical and magnetic properties. Devices used in modern high speed electronic and communication systems: transistors, lasers, photodiodes, fiber optics, Josephson junctions. Implications of material properties on fabrication and operation of devices and circuits.

Precludes additional credit for ELEC 3908.

Prerequisite(s): fourth-year status in Engineering. Not available for credit to students in Electrical Engineering or Engineering Physics.

Lectures three hours a week.

ELEC 4706 [0.5 credit]**High-Speed Electronics: Circuits and Systems**

Challenges faced in designing high-speed electronic circuits and systems. Fundamentals of high-speed Tx/Rx architectures including: timing and HDL, PLL/DLL, Tx drivers, interface to photonic components, channel modelling, Rx channel, choice of modulation, equalization, clock and data recovery. VHDL hardware and CAD software laboratories.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3500.

Lectures three hours a week, laboratory three hours a week.

ELEC 4707 [0.5 credit]**Analog Integrated Electronics**

Emphasis on integration of analog signal processing techniques in monolithic IC technology. Continuous active filter design. MOS IC technology. OP amp design. Basic sampled data concepts; Z-transform analysis, switched capacitor filters. Noise aspects. Bipolar technology: radio frequency IC design.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3509.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4708 [0.5 credit]**Advanced Digital Integrated Circuit Design**

Advanced Verilog, test benches. VLSI design based on CMOS technology, characteristics of CMOS logic circuits, cell libraries, building blocks, structured design, testing, Computer-Aided Design tools. Laboratory emphasis on design synthesis from Verilog.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering and ELEC 3500 or permission of the Department.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4709 [0.5 credit]**Integrated Sensors**

Overview of sensor technologies with emphasis on devices suitable for integration with silicon integrated circuits. Sensor design and fabrication principles including signal conditioning; discussion of automotive, biomedical, and other instrumentation applications.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4906 [0.5 credit]**Special Topics**

At the discretion of the Engineering Faculty Board, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical and Software Engineering and Engineering Physics may be offered.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4907 [1.0 credit]**Engineering Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): (ELEC 3907 or SYSC 3010), ECOR 3800, and fourth-year status in Engineering.

ELEC 4908 [1.0 credit]**Engineering Physics Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project approved for Engineering Physics. Lectures devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): ECOR 3800, and fourth-year status in Engineering. Certain projects may have additional prerequisites or corequisites.

Engineering Core (ECOR) Courses

ECOR 1010 [0.5 credit]

Introduction to Engineering

Technology, society and the environment. Graphical design communication: sketching, graphical projections; CAD. Managing data: statistical methods; spreadsheets. Design analysis: matrix programming software; symbolic computer algebra systems. Design process: proposals; reports; presentations; reporting software.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1000 (no longer offered), ECOR 1047, ECOR 1054.

Lectures four hours per week, laboratories two hours per week.

ECOR 1041 [0.25 credit]

Computation and Programming

Software development as an engineering discipline, using a modern programming language. Language syntax and semantics. Tracing and visualizing program execution. Program style and documentation. Testing and debugging tools and techniques. Binary number system to represent data in a computer.

Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1042 [0.25 credit]

Data Management

Software development using container data types (sequences, sets, maps) for data management. Modules. Data files. Incremental, iterative development of programs. Introduction to designing and implementing numerical algorithms.

Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005.

Prerequisite(s): ECOR 1041 with a minimum grade of C- and MATH 1004 (may be taken concurrently). This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1043 [0.25 credit]

Circuits

Electrical Quantities (Voltage, Charge, Current, Power). Conservation of charge and energy. Mathematical models of simple devices. Elementary circuit theory for passive elements. Thévenin's and superposition theorem. Signal filtering and amplification. Time and frequency domain. Circuit design and simulation.

Precludes additional credit for ECOR 1052.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1044 [0.25 credit]

Mechatronics

Mechatronics applications. Analog to digital signal conversion. Control systems and PID controllers. Input devices, including sensors. Data collection and processing. Output devices, including displays, actuators, and motors. Project design and economics. Environmental Impact of mechatronics engineering. System failures and failsafe design.

Precludes additional credit for ECOR 1052.

Prerequisite(s): ECOR 1041 with a minimum grade of C- and ECOR 1043 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1045 [0.25 credit]

Statics

Cartesian vector representation of forces. Components of forces. Particle equilibrium and free body diagrams. Moments and cross product. Centre of gravity and centroids. Rigid body equilibrium.

Precludes additional credit for ECOR 1053, ECOR 1101.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1046 [0.25 credit]

Mechanics

2D truss analysis (method of joints/sections). Normal stress/strain and shear stress/strain. 2D frames and machines. Internal loads - normal, shear and moment at a point. Shear and moment diagrams.

Precludes additional credit for ECOR 1053.

Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1047 [0.25 credit]

Visual Communication

Graphs and sketches, flow charts, block diagrams. Visual presentation, projection and perspectives of objects. 3D sketching. Free hand drawing. Reading engineering drawings and schematics. Introduction to scaling, dimensioning and tolerancing. Introduction to CAD.

Precludes additional credit for ECOR 1054, ECOR 1010.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1048 [0.25 credit]**Dynamics**

Kinematics and kinetics of a particle. Principle of work and energy. Conservation of energy, conservative forces, potential energy. Principles of impulse and momentum, conservation of momentum for a system of particles. Precludes additional credit for ECOR 1054, ECOR 1101. Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1051 [0.5 credit]**Fundamentals of Engineering I**

Software development as an engineering discipline, using a modern programming language. Tracing and visualization of program execution. Testing and debugging. Data management: digital representation of numbers; numerical algorithms; storing data in files; container data types: sequences, sets, maps. Includes: Experiential Learning Activity Precludes additional credit for COMP 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1606, SYSC 1005. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1052 [0.5 credit]**Fundamentals of Engineering II**

Electrical Quantities. Conservation of mass and energy. Mathematical models of simple devices. Elementary circuit theory for passive elements. Signal filtering and amplification. Time and frequency domain. Circuit design and simulation. Digital and analog signals. Mechatronics applications. Output devices. System failures and failsafe design. Includes: Experiential Learning Activity Precludes additional credit for ECOR 1043, ECOR 1044. Prerequisite(s): ECOR 1051 (may be taken concurrently). Lectures three hours per week, laboratories three hours per week.

ECOR 1053 [0.5 credit]**Fundamentals of Engineering III**

Components of forces. Particle equilibrium and free body diagrams. Moments and cross product. Centre of gravity and centroids. Rigid body equilibrium. 2D Truss analysis (method of joints/sections). Normal stress/strain and Shear stress/strain. 2D frames and machines. Includes: Experiential Learning Activity Precludes additional credit for ECOR 1045, ECOR 1046, ECOR 1101. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures three hours per week, laboratories three hours per week.

ECOR 1054 [0.5 credit]**Fundamentals of Engineering IV**

Engineering drawings and schematics. Graphs and sketches, flow charts, block diagrams. Computer-assisted design. Kinematics/Kinetics of a particle. Principles of work and energy. The Engineering Profession and Act. Organization and time management. Project management. Business, entrepreneurship and intellectual property. Includes: Experiential Learning Activity Precludes additional credit for ECOR 1010, ECOR 1047, ECOR 1048. Prerequisite(s): ECOR 1053 (may be taken concurrently). Lectures three hours per week, laboratories three hours per week.

ECOR 1055 [0.0 credit]**Introduction to Engineering Disciplines I**

Overview of professional activities oriented to the student's discipline of study: Architectural Conservation and Sustainability. Civil and Environmental. Aerospace and Mechanical. Electrical. Engineering Physics. Computer Systems, Communications and Software. Biomedical (Electrical and Mechanical). Sustainable and Renewable Energy. Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500. Lectures 1.5 hours per week.

ECOR 1056 [0.0 credit]**Introduction to Engineering Disciplines II**

Selected lectures designed to provide students with exposure to the breadth of Engineering disciplines. Online course.

ECOR 1057 [0.0 credit]**Engineering Profession**

Professional Engineers Act. Engineering documentation. History of the profession. Engineering practice: system life cycle, practice within the discipline, designing with others. Health and safety. Engineering Ethics, Equity and Diversity. Introduction to engineering law : Business, Entrepreneurship and Intellectual Property. Online course

ECOR 1101 [0.5 credit]**Mechanics I**

Introduction to mechanics. Scalars and vectors. Concurrent forces: resultant and components. Statics of particles. Moments and couples. Force system resultants. Rigid body equilibrium. Frames and machines. Internal forces. Kinematics and kinetics of particles. Conservation theorems: work-energy; impulse-momentum. Centroids and centres of gravity. Includes: Experiential Learning Activity Precludes additional credit for ECOR 1045, ECOR 1048, ECOR 1053. Prerequisite(s): MATH 1004 and MATH 1104. Lectures three hours a week, tutorials and problem analysis three hours a week.

ECOR 1606 [0.5 credit]**Problem Solving and Computers**

Introduction to engineering problem solving. Defining and modeling problems, designing algorithmic solutions, using procedural programming, selection and iteration constructs, functions, arrays, converting algorithms to a program, testing and debugging. Program style, documentation, reliability. Applications to engineering problems; may include numerical methods, sorting and searching.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 1005, SYSC 1100 (no longer offered), SYSC 1102 (no longer offered), COMP 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051.

Lectures three hours a week, laboratory three hours a week.

ECOR 2050 [0.5 credit]**Design and Analysis of Engineering Experiments**

Statistics and the design of engineering experiments. Basic exploratory data analysis. Central limit theorem. Hypothesis testing: t-test, chi-square test, type-I and type-II errors, multiple-comparison problem. Statistical bias. Design of experiments: randomization, blocking and replication, randomized blocking designs, factorial design. Statistical software packages.

Includes: Experiential Learning Activity

Prerequisite(s): 2nd Year Status in Engineering.

Lectures three hours a week, problem analysis and laboratory three hours a week.

ECOR 2606 [0.5 credit]**Numerical Methods**

Numerical algorithms and tools for engineering and problem solving. Sources of error and error propagation, solution of systems of linear equations, curve fitting, polynomial interpolation and splines, numerical differentiation and integration, root finding, solution of differential equations. Software tools.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2606 (no longer offered).

Prerequisite(s): MATH 1005 and (ECOR 1606 or SYSC 1005) and (ECOR 1010 or ELEC 1908).

Lectures three hours a week, laboratory one hour a week.

ECOR 2995 [0.0 credit]**Engineering Portfolio**

Students will be asked to reflect on their skills, strengths and weaknesses as preparation for the professional practice course. Engineering students must submit samples of their writing and communications (including, for example, laboratory reports and professional memos).

Online

ECOR 3800 [0.5 credit]**Engineering Economics**

Introduction to engineering economics; cash flow calculations; methods of comparison of alternatives; structural analysis; replacement analysis; public projects; depreciation and income tax; effects of inflation; sensitivity analysis; break-even analysis; decision making under risk and uncertainty.

Prerequisite(s): third-year status in Engineering or (ECOR 1051, ECOR 1052, ECOR 1053 and ECOR 1054).

Lectures three hours a week.

ECOR 4907 [1.0 credit]**Multidisciplinary Engineering Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in an approved major multidisciplinary engineering design project. Lectures devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and comprehensive final report are required.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 4918, ELEC 4907, ELEC 4908, ENVE 4918, MAAE 4907, SREE 4907, SYSC 4907, SYSC 4917, SYSC 4927, SYSC 4937.

Prerequisite(s): (ECOR 3800 or SYSC 4106), fourth-year status in Engineering and Permission of the faculty.

ECOR 4995 [0.5 credit]**Professional Practice**

Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized.

Precludes additional credit for MAAE 4905, CIVE 4905, SYSC 3905 or ELEC 3905 (all no longer offered).

Prerequisite(s): ECOR 2995 and fourth-year status in Engineering.

Lectures three hours a week.

Environmental Engineering (ENVE) Courses**ENVE 1001 [0.5 credit]****Architecture and the Environment**

Impacts of the environment on architecture; deterioration, freeze/thaw, solar heat, air pollution, moisture; Impacts of architecture on the environment; ecologic footprint, energy consumption, air quality, waste generation; designing with the environment; renewable energy, effective siting and landscape, passive solar energy, natural lighting, energy efficiency.

Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 2001 [0.5 credit]**Process Analysis for Environmental Engineering**

Material and energy balances for reacting and non-reacting systems. Applications in mining, metallurgy, pulp and paper, power generation, energy utilization. Emissions to the environment per unit product or service generated. Introduction to life cycle analysis, comparative products and processes.

Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent, and MAAE 2400 (may be taken concurrently), and second-year status in Engineering.

Lectures two hours a week, problem analysis three hours a week.

ENVE 2002 [0.5 credit]**Microbiology**

The biology of the Bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.

Also listed as BIOL 2303.

Prerequisite(s): BIOL 1103 or CHEM 1002 or CHEM 1101 or equivalent.

Lectures three hours a week.

ENVE 3001 [0.5 credit]**Water Treatment Principles and Design**

Theoretical aspects of unit operations for water treatment with design applications. Topics include water characteristics and contaminants, coagulation, flocculation, sedimentation, filtration, adsorption, ion exchange, membrane processes, disinfection and disinfection by-products, and management of water treatment residuals. Laboratory procedures: settling operations, filtration, aeration, and adsorption.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 3002.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3002 [0.5 credit]**Environmental Engineering Systems Modeling**

Engineered systems for pollution abatement; chemical reaction engineering; reaction kinetics and rate data analysis; design and modeling of reactors; single and multiple reactions; ideal and nonideal reactors; single and multi-parameter models; biochemical reaction engineering; process control. Laboratory procedures: reactor systems performance: Batch, CSTR and PFR.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent and MATH 2004, and second-year status in Engineering. Additional recommended background: ENVE 2001.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3003 [0.5 credit]**Water Resources Engineering**

A quantitative analysis of natural water systems and the development of these systems as a resource. Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Hydraulic properties and availability of groundwater. Storm water management.

Also listed as GEOG 4103.

Prerequisite(s): third-year status in Engineering.

Lectures three hours a week, problem analysis one hour a week.

ENVE 3004 [0.5 credit]**Contaminant and Pollutant Transport in the Environment**

Physical phenomenon governing the transport of contaminants in the environment: diffusion, advection, dispersion, sorption, interphase transfer. Derivation and application of transport equations in air, surface and groundwater pollution; analytical and numerical solutions. Equilibrium partitioning of contaminants among air, water, sediment, and biota.

Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent; ENVE 3002.

Lectures three hours a week, problem analysis one hour a week.

ENVE 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ENVE 4002 [0.5 credit]**Environmental Geotechnical Engineering**

Landfill design; hydrogeologic principles, water budget, landfill liners, geosynthetics, landfill covers, quality control/quality assurance, clay leachate interaction, composite liner design and leak detection. Landfill operation, maintenance and monitoring. Case studies of landfill design and performance. Geotechnical design of environmental control and containment systems.

Prerequisite(s): ENVE 3004, CIVE 3208.

Also offered at the graduate level, with different requirements, as ENVE 5201/EVG 7201, for which additional credit is precluded.

Lectures three hours a week, problem analysis one hour a week.

ENVE 4003 [0.5 credit]**Air Pollution and Emissions Control**

Air pollutants, classification, sources, and effects. Ambient air quality objectives and monitoring. Pollutant formation mechanisms in combustion. Major pollutant categories and control methods. Indoor air quality. Laboratory procedures: emissions from boilers and IC engines, particulate size distribution and control, IAQ parameters.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or permission of the department.

Also offered at the graduate level, with different requirements, as ENVE 5101/EVG 7101, for which additional credit is precluded.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4005 [0.5 credit]**Wastewater Treatment Principles and Design**

Theoretical aspects of unit operations and processes for wastewater treatment with design applications. Topics include wastewater characteristics, flow rates, primary treatment, chemical unit processes, biological treatment processes, advanced wastewater treatment, disinfection, biosolids treatment and disposal. Laboratory procedures: activated sludge, anaerobic growth, chemical precipitation, disinfection.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 3001, ENVE 3002.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4006 [0.5 credit]**Contaminant Hydrogeology**

Theory of flow through porous media. Site investigation: geology, hydrology and chemistry. Contaminant transport. Unsaturated and multiphase flow. Numerical modeling. Site remediation and remediation technologies.

Prerequisite(s): ENVE 3004 and MAAE 2300. Additional recommended background: ENVE 3003.

Also offered at the graduate level, with different requirements, as ENVE 5301/EVG 7301, for which additional credit is precluded.

Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 4101 [0.5 credit]**Waste Management**

Municipal, hazardous, and mine waste management. Waste composition and potential impacts, collection and transport, recycling and reuse, biological and thermal treatments, isolation. Integrated waste management planning.

Prerequisite(s): ENVE 3001, ENVE 3002 and ENVE 3004.

Also offered at the graduate level, with different requirements, as ENVE 5203/EVG 5203, for which additional credit is precluded.

Lectures three hours a week, problem analysis one hour a week.

ENVE 4104 [0.5 credit]**Environmental Planning and Impact Assessment**

Canada and U.S. environmental regulations. Framework for Environmental Impact Assessment, survey techniques for impact assessment and EIA review process. Case studies of selected engineering projects. Environmental planning, management of residuals and environmental standards. Risk assessment, policy development and decision-making. Fault-tree analysis.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 3004 and fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

ENVE 4105 [0.5 credit]**Green Building Design**

Concepts, calculations, modeling; design of green buildings and their components; sustainable sites and landscaping; passive design; building envelope; building materials; daylighting; heating, cooling, and ventilation; building-integrated renewable energy systems; indoor environmental quality; overview of building standards and codes.

Prerequisite(s): Third-year status in B.Eng. in Architectural Conservation and Sustainability Engineering, Civil Engineering, or Environmental Engineering or fourth-year standing in B.A.S. concentration in Conservation and Sustainability.

Lectures three hours a week, problem analysis one and a half hours per week.

ENVE 4106 [0.5 credit]**Indoor Environmental Quality**

Indoor environmental quality (air quality, thermal, visual, and acoustic comfort); physical and chemical parameters for characterization. Types and sources of indoor air pollution and discomfort; measurement techniques. Heating, ventilation, air conditioning, lighting practices and issues. Modelling of and design for indoor environmental quality.

Prerequisite(s): fourth year status in B.Eng. Architectural Conservation and Sustainability Engineering or B.Eng. Environmental Engineering or fourth year standing in B.A.S. concentration in Conservation and Sustainability.

Also offered at the graduate level, with different requirements, as ENVE 5104, for which additional credit is precluded.

Lectures three hours a week, problem analysis and laboratory three hours alternate weeks.

ENVE 4107 [0.5 credit]**Building Services Engineering**

This course provides details on how buildings are designed and operated. The materials provide foundational knowledge to understand building services: mechanical, electrical, plumbing systems with associated controls.

Prerequisite(s): CIVE 3209, ENVE 4105 (may be taken concurrently).

Lecture three hours per week, problem analysis three hours every other week.

ENVE 4200 [0.5 credit]**Climate Change and Engineering**

Survey of the physical science of climate change, impacts on the built environment, and climate adaptation in engineering. Greenhouse gases, global warming, paleoclimatology, and Earth system responses. Climate change impacts on structural, water, transportation, and energy systems. Climate vulnerability assessment, examples of design adaptation.

Prerequisite(s): Fourth-year status in Engineering.

Also offered at the graduate level, with different requirements, as ENVE 5200, for which additional credit is precluded.

Lecture three hours per week, problem analysis three hours every other week.

ENVE 4907 [1.0 credit]**Engineering Research Project**

A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.

Includes: Experiential Learning Activity

Precludes additional credit for ENVE 4917.

Prerequisite(s): fourth-year status in Engineering and permission of the department.

ENVE 4917 [0.5 credit]**Undergraduate Directed Study**

Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.

Includes: Experiential Learning Activity

Precludes additional credit for ENVE 4907.

Prerequisite(s): permission of the Department and completion of, or concurrent registration in, ENVE 4918. Self study.

ENVE 4918 [1.0 credit]**Design Project**

Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.

Includes: Experiential Learning Activity

Prerequisite(s): ECOR 3800 and fourth-year Status in Engineering. Certain projects may have additional requirements.

Lectures two hours alternate weeks, problem analysis three hours a week.

Mechanical Engineering (MECH) Courses**MECH 3002 [0.5 credit]****Machine Design and Practice**

The design of mechanical machine elements is studied from theoretical and practical points of view. Topics covered include: design factors, fatigue, and discrete machine elements. Problem analysis emphasizes the application to practical mechanical engineering problems.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2001 and MAAE 3202.

Lectures three hours a week, problem analysis three hours a week.

MECH 3310 [0.5 credit]**Biofluid Mechanics**

Applications of fundamental fluid mechanics to human circulatory and respiratory systems. Basic viscous flow theory including: blood flow in the heart and large arteries, air flow in extra-thoracic (nose-mouth throat) airways and lungs.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 2004 and MAAE 2300.

Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 3700 [0.5 credit]**Principles of Manufacturing**

Manufacturing processes, materials. Casting: solidification and heat flow theory, defect formation, casting design.

Metal forming: elementary plasticity theory, plastic failure criteria, force and work calculations. Bulk and sheet forming. Joining: heat flow and defect formation, residual stresses. Machining theory and methods. Hardening: diffusion, wear resistance.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2700.

Lectures three hours a week, problem analysis and laboratories three hours a week on alternate weeks.

MECH 3710 [0.5 credit]**Biomaterials**

Materials used in biomedical applications: metals, polymers, ceramics and composites. Material response and degradation. Properties of biologic materials; bone, cartilage, soft tissue. Materials selection for biocompatibility.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2700.

Lectures three hours per week, laboratories and problem analysis three hours per week.

MECH 4003 [0.5 credit]**Mechanical Systems Design**

Design of mechanical systems: establishing design criteria, conceptual design, design economics, value analysis, synthesis and optimization. Mechanical elements/systems: gear and flexible drive systems, fluid power systems. These elements are utilized in group design projects.

Includes: Experiential Learning Activity

Prerequisite(s): MECH 3002 and fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

MECH 4006 [0.5 credit]**Vehicle Engineering I**

The course emphasizes the engineering and design principles of road transport vehicles. Topics to be covered include: performance characteristics, handling behaviour and ride quality of road vehicles.

Prerequisite(s): MAAE 3004 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4007 [0.5 credit]**Vehicle Engineering II**

Engineering and design principles of off-road vehicles and air cushion technology. Topics include: mechanics of vehicle-terrain interaction - terramechanics, performance characteristics of off-road vehicles, steering of tracked vehicles, air cushion systems and their performance, applications of air cushion technology to transportation.

Prerequisite(s): MAAE 3004 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4013 [0.5 credit]**Biomedical Device Design**

Medical Devices: the industry and its regulation. Design methodologies. Examination of specific medical devices: surgical equipment, orthopedic devices, rehabilitation engineering, life support, artificial organs. Case studies.

Includes: Experiential Learning Activity

Prerequisite(s): MECH 3710, MAAE 3202, and MECH 4210 and fourth-year status in Engineering.

Lectures three hours per week, laboratories or tutorial three hours per week.

MECH 4101 [0.5 credit]**Mechanics of Deformable Solids**

Course extends the student's ability in design and stress analysis. Topics include: introductory continuum mechanics, theory of elasticity, stress function approach, Lamé and Mitchell problems, stress concentrations, thermoelasticity and plasticity.

Prerequisite(s): MAAE 3202 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4102 [0.5 credit]**Corrosion and Corrosion Control**

Introduction to corrosion. Corrosion mechanisms. Thermodynamics of corrosion. Electro-chemical kinetics of corrosion. Corrosion: types, prevention, control, testing, monitoring and inspection techniques. Corrosion in specific metals (eg. Fe, Ni, Ti and Al). Corrosion issues in specific industries: power generation and chemical processing industries.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4103 [0.5 credit]**Fatigue and Fracture Analysis**

Elastic and elasto-plastic fracture mechanics. Fatigue design methods, fatigue crack initiation and growth Paris law and strain-life methods. Fatigue testing, scatter, mean stress effects and notches. Welded and built up structures, real load histories and corrosion fatigue. Damage tolerant design and fracture control plans.

Prerequisite(s): MAAE 3202 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4104 [0.5 credit]**Vibration Analysis**

Free and forced vibrations of one and two degree-of-freedom systems. Vibration measurement and isolation. Numerical methods for multi-degree-of-freedom systems. Modal analysis techniques. Dynamic vibration absorbers. Shaft whirling. Vibration of continuous systems: bars, plates, beams and shafts. Energy methods. Holzer method.

Prerequisite(s): MAAE 3004 and fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

MECH 4105 [0.5 credit]**Introduction to Nuclear Engineering**

Atomic theory, nuclear physics, radioactivity, photoelectric effect, mass defect, binding energy, nuclides, neutron diffusion and moderation. Reactor theory, kinetics, control. Reactor types, reactor poisoning, xenon oscillations. Reactor materials, corrosion, fuel and fuel cycle. Nuclear medicine. Radiation protection, reactor safety fundamentals.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4106 [0.5 credit]**Nuclear Power Plant Design**

Elements of design, basic design, and new generation of nuclear reactors. Major systems of CANDU reactor and its safety principles. Balance of Plant Systems. Licensing requirements for design (IAEA, CNSC and USNRC regulations). Analytical/computer codes in safety assessments and design.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

MECH 4107 [0.5 credit]**Internal Combustion Engines**

This course explores the design process of an internal combustion engine including: Internal Aerodynamics, Combustion, Rotating and Reciprocating Components, Structures, Control Systems, Manufacturing and Testing Methods. Students will design/optimize an engine component utilizing industry standard Ricardo Wave simulation software.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lecture three hours per week.

MECH 4210 [0.5 credit]**Biomechanics**

The biomechanics of biological systems; muscles and movement, nerves and motor control. Measurements of motion, strain and neural signals. The hand and manipulation; locomotion and the leg.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2101 and fourth-year status in Engineering.

Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 4305 [0.5 credit]**Fluid Machinery**

Types of machines. Similarity: performance parameters; characteristics; cavitation. Velocity triangles. Euler equation: impulse and reaction. Radial pumps and compressors: analysis, design and operation. Axial pumps and compressors: cascade and blade-element methods; staging; off-design performance; stall and surge. Axial turbines. Current design practice.

Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4401 [0.5 credit]**Power Plant Analysis**

Criteria of merit; selection of power plant for transportation and power generation applications; interrelation among mechanical, thermodynamic and aerodynamic design processes; jet propulsion, turbojets and turbofans; alternative proposals for vehicular power plant; combined cycle applications.

Precludes additional credit for AERO 4402.

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4403 [0.5 credit]**Power Generation Systems**

Energy sources and resources. Basic elements of power generation. Hydro-electric, fossil-fuel, fissile-fuel power plants. Geothermal, solar and wind power plants. Economic and environmental considerations. Energy storage. Future power needs.

Includes: Experiential Learning Activity

Precludes additional credit for SREE 4001.

Prerequisite(s): MAAE 2300 and MAAE 2400 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week and problem analysis three hours per week.

MECH 4406 [0.5 credit]**Heat Transfer**

Mechanisms of heat transfer: fundamentals and solutions. Steady and transient conduction: solution and numerical and electrical analog techniques. Convective heat transfer: free and forced convection for laminar and turbulent flows; heat exchangers. Heat transfer between black and grey surfaces, radiation shields, gas radiation, radiation interchange.

Precludes additional credit for AERO 4446.

Prerequisite(s): MAAE 2400 and (MAAE 3300, MECH 3310, or (ENVE 3001 and permission of the Department of Mechanical and Aerospace Engineering)) and fourth-year status in Engineering.

Lectures three hours a week. Problem analysis and laboratories three hours a week.

MECH 4407 [0.5 credit]**Heating and Air Conditioning**

Environmental demands for residential, commercial and industrial systems. Methods of altering and controlling environment. Air distribution. Refrigeration methods, equipment and controls. Integrated year-round air-conditioning and heating systems; heat pumps. Cooling load and air-conditioning calculations. Thermal radiation control. Component matching. System analysis and design.

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4408 [0.5 credit]**Thermofluids and Energy Systems Design**

Integration of fluid mechanics, thermodynamics, and heat transfer for design of energy conversion systems. Chemical kinetics and mass transfer. Efficient combustion, fuel cells and batteries. Efficient operation and design of engines, power generators, boilers, furnaces, incinerators, and co-generation systems. Emerging energy systems. Prerequisite(s): MAAE 3400 and fourth-year status in Engineering. Lectures three hours per week.

MECH 4501 [0.5 credit]**State Space Modeling and Control**

Review of matrices. Geometric structure and dynamics of linear systems. Controllability and observability. Pole placement design of controllers and observers. Design of regulator and servo systems. Transmission zeros. Eigenstructure assignment. Relationship to frequency or classical control techniques. Computer solutions using MATLAB. Applications. Precludes additional credit for SYSC 5502. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering or by permission of the department. Lectures three hours a week.

MECH 4503 [0.5 credit]**An Introduction to Robotics**

History of robotics and typical applications. Robotic actuators and sensors. Kinematics of manipulators, inverse kinematics, differential relationships and the Jacobian. Manipulator dynamics. Trajectory generation and path planning. Robot control and performance evaluation. Force control and compliance. Applications in manufacturing and other industries. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering or by permission of the department. Lectures three hours a week.

MECH 4604 [0.5 credit]**Finite Element Methods**

Finite element methodology with emphasis on applications to stress analysis, heat transfer and fluid flow using the simplest one- and two-dimensional elements. Direct equilibrium, variational and Galerkin formulations. Computer programs and practical applications. Higher order elements. Prerequisite(s): MAAE 3202 and fourth-year status in Engineering or by permission of department. Lectures three hours a week.

MECH 4704 [0.5 credit]**Integrated Manufacturing - CIMS**

Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise. Prerequisite(s): Fourth-year status in Engineering or by permission of the department. Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded. Lectures three hours a week.

MECH 4705 [0.5 credit]**CAD/CAM**

Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed. Prerequisite(s): MAAE 2001 and fourth-year status in Engineering or by permission of the department. Lectures three hours a week.

MECH 4805 [0.5 credit]**Measurement and Data Systems**

Experimental data, accuracy and uncertainty analysis. Analog systems. Sensors. Signal conditioning. Op-Amps, instrumentation amplifiers, charge amplifiers, filters. Digital techniques. Encoders, A/D D/A converters. Data acquisition using microcomputers. Hardware and software considerations. Interfacing. Applications to measurement of motion, strain, force/torque, pressure, fluid flow, temperature. Precludes additional credit for ELEC 4805. Prerequisite(s): ECOR 2050 and fourth-year status in Engineering or by permission of the department. Lectures three hours a week.

MECH 4806 [0.5 credit]**Mechatronics**

Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications. Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering or by permission of the department. Lectures three hours per week.

Mechanical and Aerospace Engineering (MAAE) Courses

MAAE 2001 [0.5 credit]

Engineering Graphical Design

Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Assignments will make extensive use of Computer-Aided Design (CAD) and will include the production of detail and assembly drawings from actual physical models.

Includes: Experiential Learning Activity

Also listed as AERO 2001.

Prerequisite(s): Second-year status in Engineering.

Lectures and tutorials two hours a week, laboratory four hours a week.

MAAE 2101 [0.5 credit]

Engineering Dynamics

Review of kinematics and kinetics of particles: rectilinear and curvilinear motions; Newton's second law; energy and momentum methods. Kinematics and kinetics of rigid bodies: plane motion of rigid bodies; forces and accelerations; energy and momentum methods.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 2101.

Prerequisite(s): Second-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

MAAE 2202 [0.5 credit]

Mechanics of Solids I

Review of Principles of Statics; friction problems; Concepts of stress and strain at a point; statically determinate and indeterminate stress systems; torsion of circular sections; bending moment and shear force diagrams; stresses and deflections in bending; buckling instability.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 2200.

Prerequisite(s): Second-year status in Engineering.

Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 2300 [0.5 credit]

Fluid Mechanics I

Fluid properties. Units. Kinematics, dynamics of fluid motion: concepts of streamline, control volume, steady and one-dimensional flows; continuity, Euler, Bernoulli, steady flow energy, momentum, moment of momentum equations; applications. Fluid statics; pressure distribution in fluid at rest; hydrostatic forces on plane and curved surfaces; buoyancy.

Includes: Experiential Learning Activity

Prerequisite(s): Second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2400 [0.5 credit]

Thermodynamics and Heat Transfer

Basic concepts of thermodynamics: temperature, work, heat, internal energy and enthalpy. First law for closed and steady-flow open systems. Thermodynamic properties of pure substances; changes of phase; equation of state. Second law: entropy. Simple power and refrigeration cycles. Introduction to heat transfer: conduction, convection, radiation.

Includes: Experiential Learning Activity

Prerequisite(s): Second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2700 [0.5 credit]

Engineering Materials

Materials (metals, alloys, polymers) in engineering service; relationship of interatomic bonding, crystal structure and defect structure (vacancies, dislocations) to material properties; polymers, phase diagrams and alloys; microstructure control (heat treatment) and mechanical properties; material failure; corrosion.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 2700.

Prerequisite(s): Second-year status in Engineering.

Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3004 [0.5 credit]

Dynamics of Machinery

Kinematic and dynamic analysis of mechanisms and machines. Mechanism force analysis. Static and dynamic balancing. Kinematic and dynamic analysis of cams. Free and forced vibration of single-degree-of-freedom systems. Introduction to multibody dynamics.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2101 and MATH 1005.

Lectures three hours a week, problem analysis and laboratories two hours a week.

MAAE 3202 [0.5 credit]

Mechanics of Solids II

Stress and strain transformations: torsion of non-circular sections; unsymmetric bending and shear centre; energy methods; complex stresses and criteria of yielding; elementary theory of elasticity; axisymmetric deformations.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 3202.

Prerequisite(s): MAAE 2202 and MATH 1005 (co-req).

Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3300 [0.5 credit]**Fluid Mechanics II**

Review of control volume analysis. Dimensional analysis and similitude. Compressible flow: isentropic flow relations, flow in ducts and nozzles, effects of friction and heat transfer, normal and oblique shocks, two-dimensional isentropic expansion. Viscous flow theory: hydrodynamic lubrication and introduction to boundary layers.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 2004 and MAAE 2300.

Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3400 [0.5 credit]**Applied Thermodynamics**

Gas and vapour power cycles: reheat, regeneration, combined gas/vapour cycles, cogeneration. Heat pump and refrigeration cycles: vapour compression cycles, absorption refrigeration and gas refrigeration. Mixtures of perfect gases and vapours: psychrometry and combustion. Principles of turbomachinery.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005 and MAAE 2400.

Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3500 [0.5 credit]**Feedback Control Systems**

Introduction to the linear feedback control. Analysis and design of classical control systems. Stability and the Routh-Hurwitz criteria. Time and frequency domain performance criteria, robustness and sensitivity. Root locus, Bode and Nyquist design techniques. Control system components and industrial process automation.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 4500 (no longer offered), SYSC 4505.

Prerequisite(s): MATH 3705 and (SYSC 3600 or SYSC 3610).

Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

MAAE 4102 [0.5 credit]**Materials: Strength and Fracture**

Analysis and prevention of failures in metals; plasticity analysis and plastic collapse; micro-mechanisms of fracture, conditions leading to crack growth and transition temperature effects, fracture mechanics, fatigue, environmentally assisted cracking, non-destructive evaluation and testing.

Prerequisite(s): MAAE 2202 and MAAE 2700 and fourth-year status in Engineering.

Lectures three hours a week.

MAAE 4902 [0.5 credit]**Special Topics: Mechanical and Aerospace Engineering**

Selected advanced topics of interest to Aerospace and Mechanical Engineering students, subject to the discretion of the Faculty of Engineering and Design.

Prerequisite(s): permission of the Department.

Lecture three hours a week.

MAAE 4903 [0.5 credit]**Special Topics: Mech & Aero Eng.**

At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.

Prerequisite(s): permission of the Department.

Lecture three hours a week.

MAAE 4904 [0.5 credit]**Special Topics: Mechanical and Aerospace Engineering**

Selected advanced topics of interest to Aerospace and Mechanical Engineering students, subject to the discretion of the Faculty of Engineering and Design.

Prerequisite(s): permission of department.

Lectures three hours a week.

MAAE 4906 [0.5 credit]**Special Topics: Mech and Aero Eng.**

At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.

Prerequisite(s): permission of the Department.

MAAE 4907 [1.0 credit]**Engineering Design Project**

Team project in the design of an aerospace, biomedical, mechanical, or sustainable energy system. Opportunity to develop initiative, engineering judgement, self-reliance, and creativity in a team environment. Results submitted in a comprehensive report as well as through formal oral presentations.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year status in engineering and (completion of or concurrent registration in AERO 4003, AERO 4842, MECH 4003, MECH 4013, or SREE 4001, or permission of Department). Certain projects may have additional prerequisites.

MAAE 4917 [0.5 credit]**Undergraduate Directed Study**

Study, analysis, and solution of an engineering problem. Results presented in the form of a written report. Carried out under the close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Department and completion of, or concurrent registration in, MAAE 4907.

Sustainable and Renewable Energy (SREE) Courses

SREE 1000 [0.0 credit]

Introduction to Sustainable Energy

The concept of energy sustainability. Energy-economy system. Global energy trends, the next 100 years. Energy reserves and resources. Primary and secondary clean energy. Energy use, efficiency and renewables. Energy and the environment/climate change. Sustainable energy choices and policies.

Prerequisite(s): registration in Sustainable and Renewable Energy Engineering.

Lectures one hour per week.

SREE 3001 [0.5 credit]

Sustainable and Renewable Energy Sources

Primary energy sources and their associated fundamental physics of conversion. Renewables: wind, large hydro, solar radiation, solar thermal. Fossil and biofuels.

Nuclear. Climate science: the carbon cycle and the role of anthropogenic GHG emissions in climate warming.

Terrestrial, thermodynamic and electrical limitations.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 2001 and MAAE 2300 and (ELEC 2602 or ELEC 3605 or fourth-year status in Environmental Engineering).

Lectures three hours per week, laboratories/problem analysis one hour per week.

SREE 3002 [0.5 credit]

Electrical Distribution Systems

Electricity Distribution: topology, load characteristics, load prediction, voltage regulation, power flow, power loss, capacitors, state estimation, system reliability, system protection. Distribution Automation: components and architectures, communication systems. Distributed Generation: guides and regulations, microgrids, case study.

Includes: Experiential Learning Activity

Prerequisite(s): SREE 3001 and (ELEC 2602 or ELEC 3605).

Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 3003 [0.5 credit]

Sustainable and Renewable Electricity Generation

Power system structures; photovoltaic cell: model, current#voltage curves, maximum power point tracking, grid connection; grid connection of wind generator; DC# AC and AC#DC converter simulation and analysis; energy storage classification; battery: equivalent circuit model, charging and discharging; renewable generation; feed#in tariff program.

Includes: Experiential Learning Activity

Prerequisite(s): SREE 3001 and (ELEC 2602 or ELEC 3605).

Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 4001 [0.5 credit]

Efficient Energy Conversion

Sustainable large-scale power generation. Geothermal, solar thermal, hydrogen power plants. Thermal grids and thermal energy storage. Environmental and economic aspects of power generation. Impacts of intermittent power generation. Sizing of wind, solar PV, run-of-river hydro, and offshore power plants. Current and future energy network topologies.

Includes: Experiential Learning Activity

Precludes additional credit for MECH 4403.

Prerequisite(s): MAAE 2300, MAAE 2400 and fourth year status in Sustainable & Renewable Energy Engineering.

Lectures three hours per week, laboratories/problem analysis three hours per week.

SREE 4002 [0.5 credit]

Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics

Energy technologies exist within a context of economic, policy, and behavioral choices that affect their adoption.

This course will introduce engineering methods for analyzing risk, uncertainty, and system-level decision-

making. We will investigate criteria that affect energy systems: reliability, resilience, economics, financing,

health, and environmental impacts.

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours per week.

SREE 4907 [1.0 credit]

Energy Engineering Project

Student teams develop professional-level experience by applying, honing, integrating and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): ECOR 3800, SREE 3002 and SREE 3003, and fourth-year status in Sustainable and Renewable Energy Engineering. Certain projects may have additional prerequisites or corequisites.

Systems and Computer Engineering (SYSC) Courses

Note: the Departments of Systems and Computer Engineering and Electronics offer courses in: Biomedical and Electrical Engineering, Communications Engineering, Computer Systems Engineering, Electrical Engineering, Software Engineering and Engineering Physics.

SYSC 1005 [0.5 credit]**Introduction to Software Development**

Software development as an engineering discipline, using a modern programming language, Language syntax. Algorithm design. Tracing and visualizing program execution. Testing and debugging. Program style, documentation, reliability. Lab projects are drawn from a variety of application domains: digital image manipulation, computer games, robotics.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, SYSC 1100 (no longer offered), COMP 1005 and COMP 1405.

Lectures three hours a week, laboratory three hours a week.

SYSC 2001 [0.5 credit]**Computer Systems Foundations**

Computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts; computer arithmetic: integer and floating point; CPU: instruction sets, addressing modes, instruction encoding. Input/output: programmed, interrupt-driven, block-oriented. Examples from several modern processor families.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2320, SYSC 3006.

Prerequisite(s): ECOR 1606 or SYSC 1005. Additional recommended background: SYSC 2006.

Lectures three hours a week, laboratory two hours a week.

SYSC 2003 [0.5 credit]**Introductory Real-Time Systems**

Principles of event-driven systems. Review of computer organization. Assemblers and linkers. Development of embedded applications. Programming external interfaces, programmable timer. Input/output methods: polling, interrupts. Real-time issues: concurrency, mutual exclusion, buffering. Introduction to concurrent processes.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3006 and SYSC 3310.

Prerequisite(s): SYSC 2001 and SYSC 2006.

Lectures three hours a week, laboratory two hours a week.

SYSC 2004 [0.5 credit]**Object-Oriented Software Development**

Designing and implementing small-scale programs as communities of collaborating objects, using a dynamically-typed or statically-typed programming language.

Fundamental concepts: classes, objects, encapsulation, information hiding, inheritance, polymorphism. Iterative, incremental development and test-driven development.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 1101, COMP 1006 and COMP 1406.

Prerequisite(s): SYSC 2006 or permission of the department, and second-year status in Engineering.

Lectures three hours a week, laboratory two hours a week.

SYSC 2006 [0.5 credit]**Foundations of Imperative Programming**

The imperative programming paradigm: assignment and state, types and variables, static and dynamic typing. Memory management and object lifetimes: static allocation, automatic allocation in activation frames, dynamic allocation. Function argument passing. Recursion. Data structures: dynamic arrays, linked lists. Encapsulation and information hiding.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2401, SYSC 4006.

Prerequisite(s): Second-year status in Engineering.

Lectures three hours a week, laboratory two hours a week.

SYSC 2010 [0.5 credit]**Programming Project**

Programming, testing, and debugging of small team-based software projects that use data from sensors to display results graphically. Modern programming tools: frameworks, libraries, version control, package management, tool chains. Sensors, signal acquisition, display, and basic filtering. Introductory network programming.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3010, SYSC 3110.

Prerequisite(s): 2nd year status in Biomedical and Electrical Engineering or Communications Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 2100 [0.5 credit]**Algorithms and Data Structures**

Thorough coverage of fundamental abstract collections: stacks, queues, lists, priority queues, dictionaries, sets, graphs. Data structures: review of arrays and linked lists; trees, heaps, hash tables. Specification, design, implementation of collections, complexity analysis of operations. Sorting algorithms.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2002 (no longer offered) and COMP 2402.

Prerequisite(s): SYSC 2006 with a minimum grade of C-, and second-year status in Engineering.

Lectures three hours a week, laboratory two hours a week.

SYSC 2310 [0.5 credit]**Introduction to Digital Systems**

Number systems: binary, decimal, hexadecimal. Digital representation of information. Computer arithmetic: integer, floating point, fixed point. Boolean logic, realization as basic digital circuits. Applications: simple memory circuits, synchronous sequential circuits for computer systems. Finite state machines, state graphs, counters, adders. Asynchronous sequential circuits. Races.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 2607.

Prerequisite(s): Enrolment in Computer Systems Engineering, Communications Engineering, or Software engineering, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 2320 [0.5 credit]**Introduction to Computer Organization and Architecture**

Computer organization: processor, memory, input/output, system bus. Microarchitecture. Instruction set architecture. Assembly language programming: addressing modes, instruction encoding, execution. Assembler. Simple digital I/O, programmable timer. Input/output methods: polling, hardware interrupts.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2001 and SYSC 3006.

Prerequisite(s): SYSC 2310 or ELEC 2607, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 2510 [0.5 credit]**Probability, Statistics and Random Processes for Engineers**

Discrete and continuous random variables. Joint and conditional probabilities, independence, sums of random variables. Expectation, moments, laws of large numbers. Introduction to statistics. Stochastic processes, stationarity, additive white Gaussian noise, Poisson processes. Markov processes, transition probabilities and rates, birth death processes, introduction to queueing theory.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3006 [0.5 credit]**Computer Organization**

Computer organization: processor, memory, input/output, system bus. Number systems: binary, decimal, hexadecimal. Assembly language programming: representation of data, instruction encoding, execution. Devices: keyboard, programmable timer, parallel interface. Input/output methods: polling, hardware/software interrupts.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2001, SYSC 2003, SYSC 2320 and SYSC 3310. May not be taken for credit by students in Computer Systems Engineering, Communications Engineering, or Software Engineering.

Prerequisite(s): SYSC 2006 and ELEC 2607.

Lectures three hours a week, laboratory two hours a week.

SYSC 3010 [0.5 credit]**Computer Systems Development Project**

Development of expertise in designing, implementing and testing industrial-quality embedded systems through team projects. Applying modern programming languages, system design practices, current development processes (refactoring, iterative and incremental development) as well as current team-management tools (communication, version control) to medium-scale projects.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 (no longer offered), and SYSC 3110.

Prerequisite(s): SYSC 2100 and either SYSC 2003 or SYSC 3310 (may be taken concurrently), and enrolment in Computer Systems Engineering.

Lectures two hours a week, laboratory three hours a week.

SYSC 3020 [0.5 credit]**Introduction to Software Engineering**

Introduction to software engineering principles, software development life-cycles. Modelling in software engineering. Current techniques, notations, methods, processes and tools used in software engineering. UML modelling. Introduction to software quality, software verification and validation, software testing.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3100, SYSC 3120, SYSC 4120 and COMP 3004.

Prerequisite(s): SYSC 2004 and (SYSC 2006 or SYSC 2002).

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3101 [0.5 credit]**Programming Languages**

Principles underlying different kinds of programming languages (procedural, functional, logic programming) and their semantics. Overview of machinery needed for language support (compilers, interpreters and run-time systems).

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3007.

Prerequisite(s): SYSC 2004.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3110 [0.5 credit]**Software Development Project**

Development of expertise in designing, implementing and testing maintainable, reusable software through team projects. Applying modern programming languages, design patterns, frameworks, UML and modern development processes (detection of olfactible source code defects, refactoring, iterative and incremental development, version control techniques) to medium-scale projects.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 and SYSC 3010.

Prerequisite(s): SYSC 2004 and SYSC 2100, and enrolment in Software Engineering.

Lectures two hours a week, laboratory three hours a week.

SYSC 3120 [0.5 credit]**Software Requirements Engineering**

Current techniques, notations, methods, processes and tools used in Requirements Engineering. Requirements elicitation, negotiation, modeling requirements, management, validation. Skills needed for Requirements Engineering and the many disciplines on which it draws. Requirements analysis: domain modeling, modeling object interactions; UML modeling. Introduction to software development processes.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3020 and COMP 3004.

Prerequisite(s): SYSC 2004 and enrolment in Software Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3200 [0.5 credit]**Industrial Engineering**

Techniques of operations research for decision-making in complex engineering systems. Linear programming, network models, PERT, integer programming, dynamic programming, queuing systems and inventory models. Problem solving is emphasized.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2300, ECON 4004, or MATH 3801.

Prerequisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.

Lectures three hours a week, laboratory/problem analysis one and a half hours per week.

SYSC 3203 [0.5 credit]**Bioelectrical Systems**

Biomedical transducers, sensors, and biomedical actuators. Amplifier designs: inverting, noninverting, differential, and bioinstrumentation. Differentiators, integrators, and rectifiers. Oscillators and timers. Filter design. Sampling and quantization. Electrical machines. Electrical safety.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005 and (ELEC 2507 or ELEC 3605), and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 3303 [0.5 credit]**Real-Time Concurrent Systems**

Principles and practice of a systems engineering approach to the development of software for real-time, concurrent, distributed systems. Designing to achieve concurrency, performance, and robustness, using visual notations. Converting designs into programs. Introduction to hard real-time systems. Team project.

Includes: Experiential Learning Activity

Prerequisite(s): for students in the Faculty of Engineering and Design: (SYSC 2003 or SYSC 3310) and SYSC 2004. For students in Computer Science: COMP 2401 and COMP 2402.

Lectures three hours a week, laboratory two hours a week.

SYSC 3310 [0.5 credit]**Introduction to Real-Time Systems**

Principles of event-driven systems. Microcontroller organization. Development of embedded applications. Programming external interfaces, programmable timer. Input/output methods: polling, interrupts. Real-time issues: concurrency, mutual exclusion, buffering. Introduction to concurrent processes.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2003, SYSC 3006.

Prerequisite(s): SYSC 2006 with a minimum grade of C- and SYSC 2320.

Lectures three hours a week, laboratory two hours a week.

SYSC 3320 [0.5 credit]**Computer Systems Design**

System on Chip (SoC)-based computer system design. SoC internal organization. Cache memory. Interfacing: external memory, hardware subsystems. Direct memory access. Floating point units. Introduction to field programmable gate arrays.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3601 and ELEC 4601.

Prerequisite(s): SYSC 3310 and third year status in Computer Systems Engineering, or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3500 [0.5 credit]**Signals and Systems**

Signals: energy and power signals, discrete-time and continuous. Linear systems and convolution. Fourier Transform; complex Fourier series; signal spectral properties and bandwidth. Laplace transform and transient analysis. Transfer functions, block diagrams. Baseband and passband signals, with applications to communications systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3600 and SYSC 3610.

Prerequisite(s): MATH 1005 and enrolment in Communications Engineering, and second-year status in Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 3501 [0.5 credit]**Communication Theory**

Review of signals, linear systems and Fourier theory; signal bandwidth and spectra; digital waveform coding; introduction to analog and digital modulation systems; synchronization; characterization and effects of noise; link budgets; communications media and circuits; applications to current communications systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3503.

Prerequisite(s): SYSC 3600 or SYSC 3610.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3503 [0.5 credit]**Communication Theory II**

Amplitude Modulation. Frequency Modulation. Performance of AM and FM in noise. Communication channels, channel models, noise sources, noise models. Digital modulation: ASK, FSK, PSK. Optimal reception, probability of error on the AWGN channel.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3501 or SYSC 4600.

Prerequisite(s): SYSC 3500 and (STAT 2605 or SYSC 2510).

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3600 [0.5 credit]**Systems and Simulation**

Properties of linear systems. Linear dynamic models of engineering systems. Applications of the Laplace transform. Transfer functions. Block diagrams. Frequency and time response. System simulation with digital computers.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3500 or SYSC 3610.

Prerequisite(s): MATH 1005 and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 3601 [0.5 credit]**Microprocessor Systems**

Microprocessor-based system design for different microprocessor families. Microprocessors: internal organization, instruction sets, address generation, pin-outs, bus cycles, signalling waveforms. Interfacing memory and I/O devices. Interrupt structures, direct memory access. Floating point coprocessors. System bus standards. Introduction to DSPs.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3320 or ELEC 4601.

Prerequisite(s): ELEC 2607, and SYSC 2003 or permission of the department.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3610 [0.5 credit]**Biomedical Systems, Modeling, and Control**

Properties of linear systems. Linear dynamic models of biomedical systems. Biomedical application of the Laplace transforms. Transfer functions. Block diagram. Frequency and time response. Feedback, control, and stability. Biomedical systems modeling and control.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3500 or SYSC 3600.

Prerequisite(s): MATH 1005 and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

SYSC 4001 [0.5 credit]**Operating Systems**

Introduction to operating system principles. Processes and threads. CPU scheduling. Managing concurrency: mutual exclusion and synchronization, deadlock and starvation. Managing memory and input/output. Concurrent programming, including interprocess communication in distributed systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3001 and COMP 3000.

Prerequisite(s): SYSC 2006 with a minimum grade of C-.

Lectures three hours a week, laboratory three hours a week.

SYSC 4005 [0.5 credit]**Discrete Simulation/Modeling**

Simulation as a problem solving tool. Random variable generation, general discrete simulation procedure: event table and statistical gathering. Analyses of simulation data: point and interval estimation. Confidence intervals. Overview of modeling, simulation, and problem solving using SIMSCRIPT, MODSIM, and other languages.

Includes: Experiential Learning Activity

Prerequisite(s): (ECOR 2050 or SYSC 2510 or STAT 2605 or STAT 3502) and fourth-year status in Engineering, or permission of the Department.

Also offered at the graduate level, with different requirements, as SYSC 5001, for which additional credit is precluded.

Lectures three hours a week, laboratory one hour a week.

SYSC 4006 [0.5 credit]**Introduction to Systems Programming**

Introduction to C programming: Data types, flow control, functions, arrays, pointers, and arithmetic, logical and bitwise operators. Memory models, collections. Low-level I/O. Build pipeline (version control, make, preprocessing, compiling, linking) in Linux. Testing and debugging.

Precludes additional credit for SYSC 2006.

Prerequisite(s): Third-year status in Engineering, or enrollment in the M.Eng. Program in Electrical & Computer Engineering.

Lectures three hours a week.

SYSC 4101 [0.5 credit]**Software Validation**

Techniques for the systematic testing of software systems. Software validation and verification, software debugging, quality assurance, measurement and prediction of software reliability. Emphasis on the treatment of these topics in the context of real-time and distributed systems.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4004.

Prerequisite(s): SYSC 3120 or SYSC 3020.

Lectures three hours a week, laboratory/problem analysis three hours a week.

SYSC 4102 [0.5 credit]**Performance Engineering**

Techniques based on measurements and models, for predicting and evaluating the performance of computer systems. Instrumentation. Simple queueing models and approximations. Techniques for modifying software designs to improve performance.

Includes: Experiential Learning Activity

Prerequisite(s): (ECOR 2050 or STAT 3502) and SYSC 4001.

Also offered at the graduate level, with different requirements, as SYSC 5101, for which additional credit is precluded.

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4106 [0.5 credit]**The Software Economy and Project Management**

Introduction to software project management and economics; Return on software investments; Software life cycle; Work breakdown structure, scheduling and planning; Risk analysis and management; Product size and cost estimation; Earn value management; Statistical process control; Managing project team and process improvement; Bidding and contract types.

Prerequisite(s): SYSC 3120 (may be taken concurrently) and third-year status in Software Engineering or COMP 3004 and enrolment in the Bachelor of Computer Science.

Lectures three hours a week.

SYSC 4111 [0.5 credit]**Formal Methods in Software Engineering**

Introduction to formal methods in software engineering with coverage of propositional and first-order logic (syntax, semantics, proof theory), formal specification languages, bounded analysis and validation, formal specification tools, and model checking with finite-state machines, temporal logic, and model checking tools.

Prerequisite(s): COMP 1805, SYSC 3120, and SYSC 4001.

Lectures three hours a week.

SYSC 4120 [0.5 credit]**Software Architecture and Design**

Introduction and importance of software architectures and software system design in software engineering. Current techniques, modeling notations, methods, processes and tools used in software architecture and system design. Software architectures, architectural patterns, design patterns, software qualities, software reuse.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3004, SYSC 3020 and SYSC 4800 (no longer offered).

Prerequisite(s): SYSC 3120.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4201 [0.5 credit]**Ethics, Research Methods and Standards for Biomedical Engineering**

Ethical theories, ethical decision-making, biomedical research ethics: informed consent, confidentiality, privacy, research ethics boards; research methods: hypothesis formulation, data collection, sampling bias, experimental design, statistical literacy; regulations for design, manufacture, certification of medical devices; impact of technology and research (social, political, financial).

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3605 or SYSC 3203.

Lectures three hours a week, problem analysis one and a half hours per week.

SYSC 4202 [0.5 credit]**Clinical Engineering**

Overview of the Canadian health care system; brief examples of other countries; clinical engineering and the management of technologies in industrialized and in developing countries; safety, reliability, quality assurance; introduction to biomedical sensor technologies; applications of telemedicine; impact of technology on health care.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Biomedical and Electrical or Biomedical and Mechanical Engineering.

Also offered at the graduate level, with different requirements, as BIOM 5406, for which additional credit is precluded.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4203 [0.5 credit]**Bioinstrumentation and Signals**

Bioinstrumentation and biological signals; instrumentation systems, electrical safety, and biocompatibility; bioelectric signals; biopotential electrodes: material properties, selection; data acquisition; signal processing; biomedical imaging technologies; bioamplifier systems performance and characteristics; major physiological systems and associated measurements.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3610 and (ELEC 3605 or SYSC 3203) and fourth-year status in Biomedical and Electrical Engineering or fourth-year status in Biomedical and Mechanical Engineering.

Lectures three hours a week, laboratory/problem analysis three hours a week.

SYSC 4205 [0.5 credit]**Image Processing for Medical Applications**

Two-dimensional signals, filters, and Fourier transforms. Image acquisition, sampling, quantization and representation. Image perception. Digital and film cameras. Medical imaging technologies. Image processing operations: histogram, convolution, morphological, segmentation, registration. Image compression and formats.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005 and fourth-year status in Engineering.

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4310 [0.5 credit]**Computer Systems Architecture**

Evolution of computer systems architecture to improve performance. Memory hierarchy, hardware accelerators. Instruction level parallelism, pipelining, vector processing, superscalar, out-of-order execution, speculative execution. Thread level parallelism, multi-core, many-core, heterogeneous systems. Processor-level interconnect bus, non-uniform memory access. Application-oriented architectures. Virtualization.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4507.

Prerequisite(s): SYSC 3320, and enrolment in Computer Systems Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4320 [0.5 credit]**Case Studies in Computer Systems**

Examples of several modern computer systems are presented in a computer systems context: system objectives, software and hardware components, interactions. The case studies present computer systems trends emerging in practice.

Prerequisite(s): SYSC 4310, and enrolment in Computer Systems Engineering.

Lectures three hours a week, problem analysis one hour a week.

SYSC 4405 [0.5 credit]**Digital Signal Processing**

Discrete time signal and system representation: time domain, z-transform, frequency domain. Sampling theorem. Digital filters: design, response, implementation, computer-aided design. Spectral analysis: the discrete Fourier transform and the FFT. Applications of digital signal processing.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3500 or SYSC 3600 or SYSC 3610.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4415 [0.5 credit]**Introduction to Machine Learning**

Introduction to supervised and unsupervised machine learning (ML), including deeper knowledge of several algorithms of each type. Evaluation and quantification of predictive performance of ML systems. Use of one or more ML development environments.

Precludes additional credit for COMP 3105, COMP 4105 (no longer offered).

Prerequisite(s): (ECOR 2050 or STAT 3502 or STAT 2605 or SYSC 2510), SYSC 2006 (with a minimum grade of C-), and third-year status in Engineering.

Lectures three hours a week, problem analysis one hour a week.

SYSC 4502 [0.5 credit]**Communications Software**

Communications software architectures, protocols and operating systems. Application layer protocols, APIs and socket programming. P2P algorithms, network virtualization, SDN. Reliable data transfer algorithms, FSM, MSC. Network security. Multimedia applications, RTSP, CDN, DASH, RTP, RTCP. Packet scheduling algorithms, DiffServ, IntServ, RSVP. Traffic classification, cross-layer optimization.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 2004 and SYSC 4602.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4504 [0.5 credit]**Fundamentals of Web Development**

WWW architecture, web servers and browsers, core protocols. Web pages, their structure, interpretation and internal representation. Client-side and server-side programming. Data representation. Interfacing with databases and other server-side services. Cookies, state management, and privacy issues. Security. Web services.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2406.

Prerequisite(s): SYSC 2004. Additional recommended background: SYSC 4602 or SYSC 3303.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4505 [0.5 credit]**Automatic Control Systems I**

Review of Laplace transform techniques. Effects of feedback: frequency response, pole-zero positions. Compensation: root locus, Bode plots. State variables: formulation, solution of linear systems, examples of simple second-order non-linear systems. Discrete time systems: z-transforms. Signal reconstruction.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 3500, MAAE 4500 (no longer offered).

Prerequisite(s): MATH 2004 and (SYSC 3500 or SYSC 3600 or SYSC 3610).

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4507 [0.5 credit]**Computer Systems Architecture**

Evolution of computer systems architecture, influences of changing technology, techniques to improve performance, memory hierarchy, hardware accelerators. Instruction level parallelism, pipelining, vector processing, superscalar, out of order execution, speculative execution. Thread level parallelism, multi-core, many-core, heterogeneous systems. Evolution of architectures for specific application domains.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4310.

Prerequisite(s): ELEC 2607 and (SYSC 2001 or SYSC 3006).

Lectures three hours a week, laboratory/problem analysis one hour a week.

SYSC 4600 [0.5 credit]**Digital Communications**

Review of probability, random variables, signal representation. Baseband data transmission: Nyquist criterion, equalization, optimal receiver, error probability. Digital modulation, performance. Synchronization. Introduction to information theory. Error detection and correction. Spread spectrum. Applications to current digital wired and wireless communications systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3503 and SYSC 4604.

Prerequisite(s): SYSC 3501 and STAT 3502.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4602 [0.5 credit]**Computer Communications**

Layered network architectures, TCP/IP suite, circuit switching, packet switching. Physical media, data transmission, multiplexing. Data link controls, MAC protocols, random access, polling, IEEE 802 standards. Bridges, switched Ethernet, VLANs. Routing algorithms, Internet routing protocols, datagram networks, virtual circuit networks. Transport protocols.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3203.

Prerequisite(s): ECOR 2050 or SYSC 2510 or STAT 2605 or STAT 3502 (may be taken concurrently), and third-year status in Biomedical and Electrical, Electrical, Communications, Computer Systems, Software, or Sustainable and Renewable Energy Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4604 [0.5 credit]**Digital Communication Theory**

Introduction to information theory, source coding and data compression, Error control coding, Trellis coded modulation, advanced topics of current interest: spread spectrum; digital wireless communications.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4600.

Prerequisite(s): SYSC 3503.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4607 [0.5 credit]**Wireless Communications**

Wireless radio channel characterization, diversity, equalization; cellular architecture, multiple access principles, spread spectrum systems, radio resource management; examples from modern wireless systems, networks, and standards, including cellular networks, WLANs, ad hoc networks, and satellite systems.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3501 or SYSC 3503.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4700 [0.5 credit]**Telecommunications Engineering**

Telecommunications as a national and international infrastructure. Systems view of network architecture: transmission, access, switching, multiplexing, signalling, and teletraffic. Network planning, management, security and control. Role of government, regulation and competition. Current telecommunications network evolution.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Electrical, Computer Systems or Communications Engineering, and (SYSC 3501 or SYSC 3503).

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4701 [0.5 credit]**Communications Systems Lab**

Project-oriented level experience in the design of communication systems to meet user requirements. Lectures on queuing theory and teletraffic analysis; system specification and design: requirements analysis, solution alternatives, evaluation of alternative technologies, design, costing, implementation, test.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Communications Engineering or permission of the department.

Lectures two hours a week, laboratory four hours a week.

SYSC 4805 [0.5 credit]**Computer Systems Design Lab**

Project-oriented experience in the design of embedded computer systems. Lectures will discuss practical aspects related to the design and development of embedded systems, starting from sensor data acquisition and processing to decision systems, testing and embedded-system based project management, with practical application examples.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3320 or SYSC 3601, and enrolment in Computer Systems Engineering.

Lectures two hours a week, laboratory four hours a week.

SYSC 4806 [0.5 credit]**Software Engineering Lab**

Applying the full spectrum of engineering and programming knowledge acquired in the program through team projects in the laboratory. Practice in doing presentations and reviews. Lectures will discuss software engineering issues as they relate to the projects, from a mature point of view.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3005, SYSC 3110, and enrolment in Software Engineering, or permission of the department.

Lectures two hours a week, laboratory four hours a week.

SYSC 4810 [0.5 credit]**Introduction to Network and Software Security**

Fundamental concepts, terminologies, and theories of computer security; principles underlying common security controls; various types of threats and attacks on networks and software systems, how they work, and controls for dealing with them; security risk assessment and management; legal and ethical aspects of computer security.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4108.

Prerequisite(s): fourth-year status in Communications, Computer Systems or Software Engineering.

Lectures three hours a week, problem analysis one and a half hours a week.

SYSC 4906 [0.5 credit]**Special Topics**

At the discretion of the Department, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical, Software Engineering, and Engineering Physics may be offered.

Prerequisite(s): permission of the Department.

SYSC 4907 [1.0 credit]**Engineering Project**

Student teams develop professional-level experience by applying previously acquired knowledge to a major design project. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year status in Engineering. Certain projects may have additional prerequisites.

SYSC 4917 [1.0 credit]**Biomedical Engineering Project**

Student teams develop professional-level experience by applying previously acquired knowledge to a major design project in biomedical engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year status in Biomedical and Electrical Engineering. Certain projects may have additional prerequisites.

SYSC 4927 [1.0 credit]**Software Engineering Project**

Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in software engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Software Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.

Lecture one hour a week, laboratory seven hours a week.

SYSC 4937 [1.0 credit]**Communications Engineering Project**

Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in communications engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Communications Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.

Lecture one hour a week, laboratory seven hours a week.

English

This section presents the requirements for programs in:

- English B.A. Honours
- English with Concentration in Creative Writing B.A. Honours

- English with Concentration in Drama Studies B.A. Honours
- English B.A. Combined Honours
- English B.A.
- Specialization in Global Literatures B. G. In. S. Honours
- Stream in Global Literatures B.G.In.S.
- Minor in Drama Studies
- Minor in English Language and Literature
- Minor in Professional Writing
- Certificate in Professional Writing
- Post-Baccalaureate Diploma in Professional Writing

Program Requirements**English****B.A. Honours (20.0 credits)****A. Credits Included in the Major CGPA (10.0 credits)**

1. 1.0 credit from:		1.0
FYSM 1004 [1.0]	Reading Literatures and Cultures	
or		
ENGL 1010 [0.5]	Writing Essays about Literature	
and one from:		
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1100 [0.5]	Literature, Law, and Criminality	
ENGL 1200 [0.5]	Literature, Science, and Technology	
ENGL 1300 [0.5]	Literature, Psychology, and the Mind	
ENGL 1400 [0.5]	Literature, Art, and Culture	
ENGL 1600 [0.5]	Literature and Magic	
ENGL 1700 [0.5]	Climate Change and the Humanities	
2. 2.0 credits in:		2.0
ENGL 2802 [1.0]	Indigenous and Canadian Literatures	
ENGL 3106 [1.0]	Theories and Critical Practices	
3. 2.0 credits in:		2.0
ENGL 2301 [0.5]	Literatures and Cultures 500-1500	
ENGL 2302 [0.5]	Literatures and Cultures 1500-1700	
ENGL 3500 [0.5]	Literatures and Cultures 1700-1900	
ENGL 3501 [0.5]	Literatures and Cultures 1900-Now	
4. 1.0 credit in:		1.0
ENGL 2920 [0.5]	Topics in Decolonization and Migration I	
ENGL 3930 [0.5]	Topics in Decolonization and Migration II	
5. 0.5 credit from:		0.5
ENGL 3910 [0.5]	From Degree to Career	
ENGL 3911 [0.5]	Cultural Studies	
6. 0.5 credit in:		0.5
ENGL 4950 [0.5]	Topics in Postcolonial and Diaspora Lit. and Theory	
7. 0.5 credit in ENGL at the 3000-level		0.5
8. 1.5 credits in ENGL at the 4000-level		1.5
9. 1.0 credit in ENGL		1.0

B. Credits Not Included in the Major CGPA (10.0 credits)

10. 8.0 credits in electives not in ENGL	8.0
11. 2.0 credits in free electives	2.0
Total Credits	20.0

English with Concentration in Creative Writing B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit from:	1.0
FYSM 1004 [1.0] Reading Literatures and Cultures	
or	
ENGL 1010 [0.5] Writing Essays about Literature	
and one from:	
ENGL 1009 [0.5] Literature in Global Context	
ENGL 1100 [0.5] Literature, Law, and Criminality	
ENGL 1200 [0.5] Literature, Science, and Technology	
ENGL 1300 [0.5] Literature, Psychology, and the Mind	
ENGL 1400 [0.5] Literature, Art, and Culture	
ENGL 1600 [0.5] Literature and Magic	
ENGL 1700 [0.5] Climate Change and the Humanities	
2. 2.0 credits in:	2.0
ENGL 2802 [1.0] Indigenous and Canadian Literatures	
ENGL 3106 [1.0] Theories and Critical Practices	
3. 2.0 credits in:	2.0
ENGL 2301 [0.5] Literatures and Cultures 500-1500	
ENGL 2302 [0.5] Literatures and Cultures 1500-1700	
ENGL 3500 [0.5] Literatures and Cultures 1700-1900	
ENGL 3501 [0.5] Literatures and Cultures 1900-Now	
4. 1.0 credit in:	1.0
ENGL 2920 [0.5] Topics in Decolonization and Migration I	
ENGL 3930 [0.5] Topics in Decolonization and Migration II	
5. 0.5 credit from:	0.5
ENGL 3910 [0.5] From Degree to Career	
ENGL 3911 [0.5] Cultural Studies	
6. 1.0 credit from:	1.0
ENGL 2901 [0.5] Writing Poetry	
ENGL 2903 [0.5] Writing Fiction	
ENGL 2915 [0.5] Writing Creative Nonfiction	
7. 1.0 credit from:	1.0
ENGL 3902 [0.5] Writing Screenplays	
ENGL 3903 [0.5] Writing Fiction (Intermediate)	
ENGL 3906 [0.5] Writing Popular Fiction	
ENGL 3915 [0.5] Special Topics in Writing	
ENGL 3916 [0.5] Spoken Word Poetry Workshop	
8. 0.5 credit from:	0.5
ENGL 2011 [0.5] Children's Literature	
ENGL 2103 [0.5] Introduction to the Novel	
ENGL 2104 [0.5] Drama Workshop	
ENGL 2106 [0.5] Topics in Popular Fiction	
ENGL 2107 [0.5] Science Fiction	
ENGL 2202 [0.5] Weird Fiction	
ENGL 2600 [0.5] History of World Cinema I	
ENGL 2601 [0.5] History of World Cinema II	

ENGL 3007 [0.5] Reading Poetry	
ENGL 3011 [0.5] Comics and Graphic Novels	
ENGL 3601 [0.5] 20th- and 21st-Century Poetry	
ENGL 3904 [0.5] Intermediate Drama Workshop	
ENGL 4001 [0.5] Studies in Poetry	
ENGL 4003 [0.5] Studies in the Novel	
ENGL 4601 [0.5] Studies in Contemporary Poetry	
9. 0.5 credit in:	0.5
ENGL 4950 [0.5] Topics in Postcolonial and Diaspora Lit. and Theory	
10. 0.5 credit from:	0.5
ENGL 4135 [0.5] Studies in Publishing	
ENGL 4515 [0.5] Teaching Writing in School and the Workplace	
ENGL 4909 [0.5] Writing and Knowledge-Making in the Disciplines	
ENGL 4910 [0.5] Independent Creative Writing Project	
ENGL 4915 [0.5] Advanced Writing Workshop	
11. 1.0 credit in ENGL at the 4000-level	1.0
B. Credits Not Included in the Major CGPA (9.0 credits)	
12. 8.0 credits in electives not in ENGL	8.0
13. 1.0 credit in free electives	1.0
Total Credits	20.0

English with Concentration in Drama Studies B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit from:	1.0
FYSM 1004 [1.0] Reading Literatures and Cultures	
or	
ENGL 1010 [0.5] Writing Essays about Literature	
and one from:	
ENGL 1009 [0.5] Literature in Global Context	
ENGL 1100 [0.5] Literature, Law, and Criminality	
ENGL 1200 [0.5] Literature, Science, and Technology	
ENGL 1300 [0.5] Literature, Psychology, and the Mind	
ENGL 1400 [0.5] Literature, Art, and Culture	
ENGL 1600 [0.5] Literature and Magic	
ENGL 1700 [0.5] Climate Change and the Humanities	
2. 2.0 credits in:	2.0
ENGL 2802 [1.0] Indigenous and Canadian Literatures	
ENGL 3106 [1.0] Theories and Critical Practices	
3. 2.0 credits in:	2.0
ENGL 2301 [0.5] Literatures and Cultures 500-1500	
ENGL 2302 [0.5] Literatures and Cultures 1500-1700	
ENGL 3500 [0.5] Literatures and Cultures 1700-1900	
ENGL 3501 [0.5] Literatures and Cultures 1900-Now	
4. 1.0 credit in:	1.0
ENGL 2920 [0.5] Topics in Decolonization and Migration I	
ENGL 3930 [0.5] Topics in Decolonization and Migration II	
5. 0.5 credit from:	0.5

ENGL 3910 [0.5]	From Degree to Career	
ENGL 3911 [0.5]	Cultural Studies	
6. 0.5 credit from:		0.5
ENGL 3305 [0.5]	Shakespeare and the Stage	
ENGL 3306 [0.5]	Shakespeare and Film	
7. 1.0 credit from:		1.0
ENGL 2104 [0.5]	Drama Workshop	
ENGL 3902 [0.5]	Writing Screenplays	
ENGL 3904 [0.5]	Intermediate Drama Workshop	
8. 1.0 credit from:		1.0
ENGL 2605 [0.5]	Greek and Roman Drama	
ENGL 2609 [0.5]	Drama: Modes and Movements	
ENGL 2709 [0.5]	Indigenous Drama	
ENGL 3609 [0.5]	Drama: Contemporary Performance	
ENGL 4609 [0.5]	Global Stages and Theories	
9. 0.5 credit in:		0.5
ENGL 4950 [0.5]	Topics in Postcolonial and Diaspora Lit. and Theory	
10. 0.5 credit from:		0.5
ENGL 3608 [0.5]	Topics in Theatre Management	
ENGL 3905 [0.5]	Topics in Performance	
ENGL 4605 [0.5]	Theatre Production Seminar	
11. 1.0 credit in ENGL at the 4000-level		1.0
B. Credits Not Included in the Major CGPA (9.0 credits)		
12. 8.0 credits in electives not in ENGL		8.0
13. 1.0 credit in free electives		1.0
Total Credits		20.0

English

B.A. Combined Honours (20.0 credits)

A. Credits Included in the English Major CGPA (7.5 credits)

1. 1.0 credit from:		1.0
FYSM 1004 [1.0]	Reading Literatures and Cultures	
or		
ENGL 1010 [0.5]	Writing Essays about Literature	
and one from:		
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1100 [0.5]	Literature, Law, and Criminality	
ENGL 1200 [0.5]	Literature, Science, and Technology	
ENGL 1300 [0.5]	Literature, Psychology, and the Mind	
ENGL 1400 [0.5]	Literature, Art, and Culture	
ENGL 1600 [0.5]	Literature and Magic	
ENGL 1700 [0.5]	Climate Change and the Humanities	
2. 2.0 credits in:		2.0
ENGL 2802 [1.0]	Indigenous and Canadian Literatures	
ENGL 3106 [1.0]	Theories and Critical Practices	
3. 2.0 credits in:		2.0
ENGL 2301 [0.5]	Literatures and Cultures 500-1500	
ENGL 2302 [0.5]	Literatures and Cultures 1500-1700	
ENGL 3500 [0.5]	Literatures and Cultures 1700-1900	
ENGL 3501 [0.5]	Literatures and Cultures 1900-Now	
4. 1.0 credit in:		1.0

ENGL 2920 [0.5]	Topics in Decolonization and Migration I	
ENGL 3930 [0.5]	Topics in Decolonization and Migration II	
5. 0.5 credit from:		0.5
ENGL 3910 [0.5]	From Degree to Career	
ENGL 3911 [0.5]	Cultural Studies	
6. 0.5 credit in:		0.5
ENGL 4950 [0.5]	Topics in Postcolonial and Diaspora Lit. and Theory	
7. 0.5 credit in ENGL at the 4000-level		0.5
B. Additional Requirements (12.5 credits)		12.5
8. The requirements for B.A. Combined Honours in the other discipline		
9. Sufficient free elective credits to make up 20.0 credits total for the program.		
Total Credits		20.0

English

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit from:		1.0
FYSM 1004 [1.0]	Reading Literatures and Cultures	
or		
ENGL 1010 [0.5]	Writing Essays about Literature	
and one from:		
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1100 [0.5]	Literature, Law, and Criminality	
ENGL 1200 [0.5]	Literature, Science, and Technology	
ENGL 1300 [0.5]	Literature, Psychology, and the Mind	
ENGL 1400 [0.5]	Literature, Art, and Culture	
ENGL 1600 [0.5]	Literature and Magic	
ENGL 1700 [0.5]	Climate Change and the Humanities	
2. 1.0 credit in:		1.0
ENGL 2802 [1.0]	Indigenous and Canadian Literatures	
3. 2.0 credits in:		2.0
ENGL 2301 [0.5]	Literatures and Cultures 500-1500	
ENGL 2302 [0.5]	Literatures and Cultures 1500-1700	
ENGL 3500 [0.5]	Literatures and Cultures 1700-1900	
ENGL 3501 [0.5]	Literatures and Cultures 1900-Now	
4. 1.0 credit in:		1.0
ENGL 2920 [0.5]	Topics in Decolonization and Migration I	
ENGL 3930 [0.5]	Topics in Decolonization and Migration II	
5. 1.0 credit from:		1.0
ENGL 3106 [1.0]	Theories and Critical Practices	
ENGL 3910 [0.5]	From Degree to Career	
ENGL 3911 [0.5]	Cultural Studies	
B. Credits Not Included in the Major CGPA (9.0 credits)		
6. 6.0 credits in electives not in ENGL		6.0
7. 3.0 credits in free electives		3.0
Total Credits		15.0

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Literatures

B. G. In. S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses	4.5
GINs 1000 [0.5] Global History	
GINs 1010 [0.5] International Law and Politics	
GINs 1020 [0.5] Ethnography, Globalization and Culture	
GINs 2000 [0.5] Ethics and Globalization	
GINs 2010 [0.5] Globalization and International Economic Issues	
GINs 2020 [0.5] Global Literatures	
GINs 3010 [0.5] Global and International Theory	
GINs 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	
GINs 4090 [0.5] Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation	
GINs 1300 [0.0] International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization	
a. 1.0 credit in: Foundations	1.0
ENGL 1009 [0.5] Literature in Global Context	
ENGL 1010 [0.5] Writing Essays about Literature	
b. 1.0 credit from: Methods	1.0
ENGL 2005 [0.5] Theory and Criticism	
ENGL 3106 [1.0] Theories and Critical Practices	
ENGL 3605 [0.5] Modern and Contemporary Literary Theory	
ENGL 3965 [0.5] Intro to Postcolonial Theory	
c. 1.0 credit from: Global Literatures at the 2000-level	1.0
ENGL 2908 [0.5] Celtic Literatures	
ENGL 2920 [0.5] Topics in Decolonization and Migration I	
ENGL 2926 [0.5] African Literatures I	
ENGL 2927 [0.5] African Literatures II	
ENGL 2936 [0.5] South Asian Literatures I	
ENGL 2937 [0.5] South Asian Literatures II	
ENGL 2956 [0.5] Literatures of the Americas I	
ENGL 2957 [0.5] Literatures of the Americas II	
d. 1.0 credit from: Global Literatures at the 3000-level	1.0
ENGL 3805 [0.5] Literature and Culture in Russia and Eurasia	
ENGL 3930 [0.5] Topics in Decolonization and Migration II	
ENGL 3940 [0.5] Studies in Diaspora Lit.	
ENGL 3960 [0.5] Studies in Indigenous Literature	
ENGL 3972 [0.5] Studies in Postcolonial Literature	
e. 1.0 additional credit in Global Literatures courses, not already used in c. or d. above	1.0
f. 1.0 credit from: Context for Global Literatures	1.0

ENGL 2105 [0.5] History of the English Language	
ENGL 2700 [0.5] American Literatures I	
ENGL 2701 [0.5] American Literatures II	
ENGL 2802 [1.0] Indigenous and Canadian Literatures	
g. 1.5 credits from: Honours Seminars and Honours Research Essay	1.5
ENGL 4115 [0.5] Culture and the Text (topic in Global Literatures)	
ENGL 4802 [0.5] Race, Ethnicity and Canadian Lit.	
ENGL 4947 [0.5] Issues in Diaspora Literature	
ENGL 4960 [0.5] Indigenous Literatures I	
ENGL 4961 [0.5] Indigenous Literatures II	
ENGL 4975 [0.5] Issues in Postcolonial Theory	
GINs 4908 [1.0] Honours Research Essay (topic in Global Literatures)	

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives	8.0
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C. Additional Requirements

5. The International Experience requirement must be met.
6. The Language requirement must be met.

Total Credits	20.0
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Stream in Global Literatures

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses	4.0
GINs 1000 [0.5] Global History	
GINs 1010 [0.5] International Law and Politics	
GINs 1020 [0.5] Ethnography, Globalization and Culture	
GINs 2000 [0.5] Ethics and Globalization	
GINs 2010 [0.5] Globalization and International Economic Issues	
GINs 2020 [0.5] Global Literatures	
GINs 3010 [0.5] Global and International Theory	
GINs 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream	4.0
a. Foundations	
ENGL 1009 [0.5] Literature in Global Context	
ENGL 1010 [0.5] Writing Essays about Literature	
b. Methods	
ENGL 2005 [0.5] Theory and Criticism	
ENGL 3106 [1.0] Theories and Critical Practices	
ENGL 3605 [0.5] Modern and Contemporary Literary Theory	
ENGL 3965 [0.5] Intro to Postcolonial Theory	
c. Global Literatures at the 2000-level	
ENGL 2908 [0.5] Celtic Literatures	
ENGL 2920 [0.5] Topics in Decolonization and Migration I	
ENGL 2926 [0.5] African Literatures I	
ENGL 2927 [0.5] African Literatures II	
ENGL 2936 [0.5] South Asian Literatures I	
ENGL 2937 [0.5] South Asian Literatures II	
ENGL 2956 [0.5] Literatures of the Americas I	
ENGL 2957 [0.5] Literatures of the Americas II	

d. Global Literatures at the 3000-level		
ENGL 3805 [0.5]	Literature and Culture in Russia and Eurasia	
ENGL 3930 [0.5]	Topics in Decolonization and Migration II	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
ENGL 3972 [0.5]	Studies in Postcolonial Literature	
e. Context for Global Literatures		
ENGL 2105 [0.5]	History of the English Language	
ENGL 2700 [0.5]	American Literatures I	
ENGL 2701 [0.5]	American Literatures II	
ENGL 2802 [1.0]	Indigenous and Canadian Literatures	
B. Credits Not Included in the Major CGPA (7.0 credits):		
3. 7.0 credits	in free electives	7.0
C. Additional Requirements		
4. The Language requirement must be met.		
Total Credits		15.0

Minor in Drama Studies (4.0 credits)

Open to all undergraduate degree students not in English programs.

Requirements:

1. 1.0 credit from:		1.0
FYSM 1004 [1.0]	Reading Literatures and Cultures	
or		
ENGL 1010 [0.5]	Writing Essays about Literature	
and one from:		
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1100 [0.5]	Literature, Law, and Criminality	
ENGL 1200 [0.5]	Literature, Science, and Technology	
ENGL 1300 [0.5]	Literature, Psychology, and the Mind	
ENGL 1400 [0.5]	Literature, Art, and Culture	
ENGL 1600 [0.5]	Literature and Magic	
ENGL 1609 [0.5]	Introduction to Drama Studies	
ENGL 1700 [0.5]	Climate Change and the Humanities	
2. 1.0 credit from:		1.0
ENGL 2104 [0.5]	Drama Workshop	
ENGL 3608 [0.5]	Topics in Theatre Management	
ENGL 3902 [0.5]	Writing Screenplays	
ENGL 3904 [0.5]	Intermediate Drama Workshop	
ENGL 3905 [0.5]	Topics in Performance	
ENGL 4605 [0.5]	Theatre Production Seminar	
3. 1.0 credit in:		1.0
ENGL 3305 [0.5]	Shakespeare and the Stage	
ENGL 3306 [0.5]	Shakespeare and Film	
4. 1.0 credit from:		1.0
ENGL 2605 [0.5]	Greek and Roman Drama	
ENGL 2609 [0.5]	Drama: Modes and Movements	
ENGL 2709 [0.5]	Indigenous Drama	
ENGL 3609 [0.5]	Drama: Contemporary Performance	
ENGL 4609 [0.5]	Global Stages and Theories	

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Minor in English Language and Literature (4.0 credits)

Open to all undergraduate degree students not in English programs or the B.G.In.S. Specialization or Stream in Global Literatures.

Requirements:

1. 1.0 credit from:		1.0
FYSM 1004 [1.0]	Reading Literatures and Cultures (recommended)	
or		
ENGL 1010 [0.5]	Writing Essays about Literature	
and one from:		
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1100 [0.5]	Literature, Law, and Criminality	
ENGL 1200 [0.5]	Literature, Science, and Technology	
ENGL 1300 [0.5]	Literature, Psychology, and the Mind	
ENGL 1400 [0.5]	Literature, Art, and Culture	
ENGL 1600 [0.5]	Literature and Magic	
ENGL 1700 [0.5]	Climate Change and the Humanities	
2. 2.0 credits	in ENGL at the 2000-level or above	2.0
3. 1.0 credit	in ENGL at the 3000-level or above	1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Minor in Professional Writing (4.0 credits)

Students may declare only one of the Professional Writing Certificate or the Professional Writing Minor. Open to all undergraduate students.

Requirements:

1. 1.0 credit in:		1.0
ENGL 1008 [0.5]	English Grammar: Fundamentals	
ALDS 2202 [0.5]	Analysis of Written Language Use	
2. 1.0 credit in:		1.0
ALDS 3402/ ENGL 3909 [0.5]	Research and Theory in Workplace Writing	
ALDS 3414/ ENGL 3414 [0.5]	Introduction to Professional Writing and Editing	
3. 2.0 credits in:		2.0
ENGL 4135 [0.5]	Studies in Publishing	
ALDS 4404/ ENGL 4004 [0.5]	Writing and Knowledge-Making in the Professions	
ALDS 4414/ ENGL 4414 [0.5]	Professional Writing I	
ALDS 4415/ ENGL 4415 [0.5]	Professional Writing II	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Certificate in Professional Writing (5.0 credits)

Students may declare only one of the Professional Writing Certificate or the Professional Writing Minor. To be taken concurrently with an Honours degree, provided the Major CGPA in the Honours program is at least 7.50. Open to all undergraduate students not in the English BA Honours Concentration in Creative Writing or the English BA Honours Concentration in Drama Studies.

Graduation

A candidate for the Certificate in Professional Writing (CPW) must obtain a grade of C or higher in all courses taken at Carleton University under the CPW program.

Requirements:

1. 1.0 credit in:	1.0
ENGL 1008 [0.5] English Grammar: Fundamentals	
ALDS 2202 [0.5] Analysis of Written Language Use	
2. 3.0 credits in:	3.0
ALDS 3402/ ENGL 3909 [0.5] Research and Theory in Workplace Writing	
ALDS 3414/ ENGL 3414 [0.5] Introduction to Professional Writing and Editing	
ALDS 4404/ ENGL 4004 [0.5] Writing and Knowledge-Making in the Professions	
ENGL 4135 [0.5] Studies in Publishing	
ALDS 4414/ ENGL 4414 [0.5] Professional Writing I	
ALDS 4415/ ENGL 4415 [0.5] Professional Writing II	
3. 1.0 credit from:	1.0
ALDS 3401/ ENGL 3908 [0.5] Research and Theory in Academic Writing	
ALDS 4403/ ENGL 4909 [0.5] Writing and Knowledge-Making in the Disciplines	
ALDS 4405/ ENGL 4515 [0.5] Teaching Writing in School and the Workplace	
Total Credits	5.0

Post-Baccalaureate Diploma in Professional Writing (5.0 credits)

Students applying for admission must have an Honours undergraduate degree with a GPA of 8.00 or higher. The PBD is a one-year, 5.0 credit post-degree option.

Graduation

A candidate for the post-baccalaureate diploma must obtain a grade of C- or higher in all courses taken at Carleton University under the post-baccalaureate program.

Requirements:

1. 1.0 credit in:	1.0
ENGL 1008 [0.5] English Grammar: Fundamentals	
ALDS 2202 [0.5] Analysis of Written Language Use	
2. 3.0 credits in:	3.0
ALDS 3402/ ENGL 3909 [0.5] Research and Theory in Workplace Writing	
ALDS 3414/ ENGL 3414 [0.5] Introduction to Professional Writing and Editing	
ALDS 4404/ ENGL 4004 [0.5] Writing and Knowledge-Making in the Professions	
ENGL 4135 [0.5] Studies in Publishing	

ALDS 4414/ ENGL 4414 [0.5]	Professional Writing I	
ALDS 4415/ ENGL 4415 [0.5]	Professional Writing II	
3. 1.0 credit from:		1.0
ALDS 3401/ ENGL 3908 [0.5]	Research and Theory in Academic Writing	
ALDS 4403/ ENGL 4909 [0.5]	Writing and Knowledge-Making in the Disciplines	
ALDS 4405/ ENGL 4515 [0.5]	Teaching Writing in School and the Workplace	
Total Credits		5.0

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew,

Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult

the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The

summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours English: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours English program;
2. Obtained and maintained an overall CGPA of 9.0 or higher at the end of second year of academic study

3. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher by the end of third year of academic study

Students in B.A. Honours English must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: ENGL 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	W	Winter	S
Summer		Summer		Summer	S	Summer	O		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are

described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Diploma

- **Post-Baccalaureate Diploma in Professional Writing**

To be eligible for admission to the Post-Baccalaureate Diploma in Professional Writing students must normally present an honours undergraduate degree with a GPA of 8.0 or higher.

English (ENGL) Courses

ENGL 1002 [0.5 credit] Writing and Language I

The first half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program.

Includes: Experiential Learning Activity
Precludes additional credit for ENGL 1005 (no longer offered).

Lectures and workshop three hours a week.

ENGL 1003 [0.5 credit] Writing and Language II

The second half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program.

Includes: Experiential Learning Activity
Precludes additional credit for ENGL 1005 (no longer offered).

Prerequisite(s): ENGL 1002.

Lectures and workshop three hours a week.

ENGL 1008 [0.5 credit] English Grammar: Fundamentals

A practical and intensive overview of English grammar designed for students who want to improve their understanding of grammar for their own writing and reading. This is not an ESL course.

Lectures three hours a week.

ENGL 1009 [0.5 credit] Literature in Global Context

Introduction to the study of literature from a global perspective. Students will be exposed to writers from various locations and to methods for studying literature across national boundaries.

Lecture three hours a week.

ENGL 1010 [0.5 credit] Writing Essays about Literature

An intensive writing course focusing on the formulation and construction of a literary essay.

Precludes additional credit for ENGL 1020.

Lectures three hours a week.

ENGL 1020 [0.5 credit] Effective Writing

The rhetorical principles, skills, and structures necessary for the kind of writing done at the university level. Clear and effective composition as a mode of research, discovery, analysis, and persuasion. Students pursuing the English major or minor should take ENGL 1010 instead of ENGL 1020.

Precludes additional credit for ENGL 1010.

Lectures three hours a week.

ENGL 1100 [0.5 credit] Literature, Law, and Criminality

An introductory course whose readings focus on the intersections between literature, law, and criminality. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.

Lecture three hours a week.

ENGL 1200 [0.5 credit]**Literature, Science, and Technology**

An introductory course whose readings focus on the intersections between literature, science, and technology. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.

Lectures three hours a week.

ENGL 1300 [0.5 credit]**Literature, Psychology, and the Mind**

An introductory course whose readings focus on the intersections between literature, psychology, and the mind. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.

Lectures three hours a week.

ENGL 1400 [0.5 credit]**Literature, Art, and Culture**

An introductory course whose readings focus on the intersections between literature, art, and culture. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1600, ENGL 1700, FYSM 1004.

Lectures three hours a week.

ENGL 1500 [0.5 credit]**Introduction to Creative Writing**

An introduction to the practice of creative writing, focusing on poetry, the short story, creative non-fiction, and drama. Emphasis is also placed on contextualizing creative writing as an academic discipline, a mode of self-expression, and a professional industry.

Includes: Experiential Learning Activity

Lectures and workshops three hours a week.

ENGL 1600 [0.5 credit]**Literature and Magic**

An introductory course whose readings focus on the intersections between literature and magic. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1700, FYSM 1004.

Lecture three hours a week.

ENGL 1609 [0.5 credit]**Introduction to Drama Studies**

An introduction to drama studies, combining attention to theatre history, conventions, and devices, with attention to theatrical practice, and interpretation of selected dramatic texts. Students will develop a vocabulary for speaking and writing with confidence about theatrical productions, theatre practice, and dramatic texts.

Lecture three hours a week.

ENGL 1700 [0.5 credit]**Climate Change and the Humanities**

An introduction to literature and culture in the context of the environmental humanities and climate change.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, FYSM 1004.

Seminar or lecture three hours a week.

ENGL 2005 [0.5 credit]**Theory and Criticism**

An introduction to theories and methods of literary analysis. Through the study of literature, theory, and criticism, students will explore disciplinary history, critical terms, textual analysis, and research methods.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2008 [1.0 credit]**Myth and Symbol**

A literary study of myths and symbols from oral traditions to contemporary forms through selected interdisciplinary and theoretical approaches.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2011 [0.5 credit]**Children's Literature**

An introduction of the critical study of children's literature. Also listed as CHST 2011.

Precludes additional credit for ENGL 2006 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2012 [0.5 credit]**Greek and Roman Epic**

An examination of the genre of epic in Greco-Roman antiquity, including a close reading of translations of Homer and Vergil.

Also listed as CLCV 2008.

Precludes additional credit for CLCV 2009, ENGL 2009.

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

ENGL 2100 [0.5 credit]**Topics in Popular Culture**

Study of a selected topic related to popular culture. Precludes additional credit for ENGL 2101 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2103 [0.5 credit]**Introduction to the Novel**

A historical and critical study of the novel.

Precludes additional credit for ENGL 2003 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2104 [0.5 credit]**Drama Workshop**

A course dealing with the rudiments of theatrical performance: voice, movement, improvisation, interpretation. Exercises are based upon examples drawn from classical and contemporary repertoires.

Includes: Experiential Learning Activity

Precludes additional credit for ENGL 2000 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Workshop three hours a week.

ENGL 2105 [0.5 credit]**History of the English Language**

A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions.

Also listed as LING 2802.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2106 [0.5 credit]**Topics in Popular Culture**

An introduction to the critical study of popular fiction.

Topics will vary but may include popular narrative forms such as fantasy, horror, mystery, romance, Young Adult (YA) fiction, etc.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2107 [0.5 credit]**Science Fiction**

A study of the history and traditions of science fiction, speculative fiction, fantasy, and utopia, covering various periods, nationalities, genres, and/or media.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2108 [0.5 credit]**Women and Literature**

Representations of women and the construction of femininity in selected literary texts, the position of women as readers and authors, and the impact of feminist criticism on literary analysis.

Precludes additional credit for ENGL 2902 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2109 [0.5 credit]**Gender, Sexuality and Literature**

How literature represents, reproduces, and resists cultural notions of gender and sexuality. Topics may include: gender and sexuality in relation to literary history, production, and reception; literature by/about "deviant" or subcultural sexualities and genders.

Precludes additional credit for ENGL 2902 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2200 [0.5 credit]**Creativity, Imagination, and Writing**

This course not only surveys theories about the imagination and creativity but also teaches various rhetorical exercises and strategies for sparking inventive thinking and new ideas to fire the writing process. Consult the English Department's website for detailed information. Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.

Lectures three hours a week.

ENGL 2201 [0.5 credit]**The Pleasures of Reading**

This course introduces majors and non-majors to a selection of known and unknown "masterpieces." Texts may be grouped to explore specific themes. Requirements include a variety of assignments but no formal essay. Consult the English Department's website for detailed information.

Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.

Lectures three hours a week.

ENGL 2202 [0.5 credit]**Weird Fiction**

Introduction to a sub-category of speculative fiction that spans from traditional ghost stories and tales of the macabre to the "New Weird": contemporary writing that overthrows the clichés, conventions, and expectations of fantasy, horror, and science fiction.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2301 [0.5 credit]**Literatures and Cultures 500-1500**

A study of the period between 500 and 1500, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 2300 (no longer offered).

Prerequisite(s): Second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2302 [0.5 credit]**Literatures and Cultures 1500-1700**

A study of the period between 1500 and 1700, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 2300 (no longer offered).

Prerequisite(s): Second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2400 [0.5 credit]**Introduction to Digital Humanities**

An introduction to the principal debates in and approaches to the Digital Humanities.

Also listed as DIGH 2001.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2401 [0.5 credit]**Digital Humanities: Theory and Method**

A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects.

Includes: Experiential Learning Activity

Also listed as DIGH 2002.

Prerequisite(s): second-year standing or permission of the department.

Lecture and workshop three hours a week.

ENGL 2500 [0.5 credit]**Classical Mythology**

A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth.

Also listed as CLCV 2500.

Precludes additional credit for ENGL 2007/CLCV 2000 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

ENGL 2600 [0.5 credit]**History of World Cinema I**

Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations.

Also listed as FILM 2606.

Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120 or a 1000-level English course, and second-year standing, or permission of the discipline.

Lecture and screening three hours a week, lecture one hour a week.

ENGL 2601 [0.5 credit]**History of World Cinema II**

Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations.

Also listed as FILM 2607.

Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).

Prerequisite(s): ENGL 2600 or FILM 2606 or permission of the department.

Lecture and screening three hours a week, lecture one hour a week.

ENGL 2605 [0.5 credit]**Greek and Roman Drama**

An examination of the genres of tragedy and comedy in Greco-Roman antiquity.

Also listed as CLCV 2010.

Precludes additional credit for CLCV 2009, ENGL 2009.

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

ENGL 2609 [0.5 credit]**Drama: Modes and Movements**

A study of dramatic texts and traditions, offering attention to major dramatic modes and movements such as Ritual, Dance, Naturalism, Expressionism, Absurdism, Political Theatre, Feminist Theatre, and Global/Intercultural Theatre. Each will be investigated in the context of performance videos, live performances, and/or written text.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2700 [0.5 credit]**American Literatures I**

Introduction to the traditions of American literature through 1865.

Precludes additional credit for ENGL 2702 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2701 [0.5 credit]**American Literatures II**

Introduction to the traditions of American literature after 1865.

Precludes additional credit for ENGL 2702 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2709 [0.5 credit]**Indigenous Drama**

A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors, and other practitioners.

Also listed as INDG 2709.

Prerequisite(s): second-year standing, or permission of the Department.

Lectures three hours a week.

ENGL 2730 [0.5 credit]**Culture and Climate Change**

Selected topics related to climate change and cultural studies.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2802 [1.0 credit]**Indigenous and Canadian Literatures**

A survey of Canadian literary cultures in English from their beginnings to the present that frames them in the wider context of Indigenous writing and storytelling. This course is writing-attentive.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2900 [0.5 credit]**Literature of the Self**

A study of developments in the literary representation of the self. The course considers a wide range of major texts from the Middle Ages to the present.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2901 [0.5 credit]**Writing Poetry**

A workshop involving regular assignments in writing poetry and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

Workshop three hours a week.

ENGL 2903 [0.5 credit]**Writing Fiction**

A workshop involving regular assignments in writing prose fiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

Workshop three hours a week.

ENGL 2906 [0.5 credit]**Culture and Society**

A study of literature in relation to its social and political contexts. Topics and periods vary.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2908 [0.5 credit]**Celtic Literatures**

The literatures of Ireland, Scotland, and/or Wales. Topics will vary in national and historical scope and may be organized by theme, author, and/or genre.

Precludes additional credit for ENGL 2602 and ENGL 2606 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2910 [0.5 credit]**Book Arts Workshop**

This experiential learning course immerses students in the practical arts and histories of book production.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or permission of the department.

Workshop three hours a week.

ENGL 2915 [0.5 credit]**Writing Creative Nonfiction**

A workshop involving regular assignments in reading and writing creative nonfiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

Workshop three hours a week.

ENGL 2920 [0.5 credit]**Topics in Decolonization and Migration I**

An introduction to the study of literature and culture in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.

Prerequisite(s): Second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2926 [0.5 credit]**African Literatures I**

An introductory survey of modern African literatures, discourses, and cultural production in the first half of the 20th century.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2927 [0.5 credit]**African Literatures II**

A survey of modern African literatures, discourses, and cultural production from the era of political independence from colonialism (the 1960s) to the present.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2936 [0.5 credit]**South Asian Literatures I**

An introductory historical survey of the literatures of South Asia to the early colonial era, starting with the Indian epics and concluding with literary traditions of 18th-century India.

Precludes additional credit for ENGL 2502 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2937 [0.5 credit]**South Asian Literatures II**

An introductory survey of literatures of South Asia from the colonial and postcolonial eras. Topics include the nationalist movement, neo-colonialism, and post-colonialism.

Precludes additional credit for ENGL 2502 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2956 [0.5 credit]**Literatures of the Americas I**

Introduction to comparative and transnational approaches to the literatures and oratures of the Caribbean, and North and South America, with emphasis on the pre-colonial and colonial eras.

Precludes additional credit for ENGL 2909 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2957 [0.5 credit]**Literatures of the Americas II**

Introduction to comparative and transnational approaches to 20th- and 21st-century writing from the Caribbean, and North and South America.

Precludes additional credit for ENGL 2909 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 3003 [0.5 credit]**Literatures in Translation**

A study of non-English literatures in translation with a special focus on cultural and historical contexts.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3007 [0.5 credit]**Reading Poetry**

This course is designed to enable students to develop skills in reading and writing about poetry. Readings will be chosen from a variety of authors, periods, and/or genres.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3008 [0.5 credit]**Studies in Greek Literature**

A study of an author or topic in Greek literature. Contents of this course vary from year to year.

Also listed as CLCV 3701.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

ENGL 3009 [0.5 credit]**Studies in Roman Literature**

A study of an author or topic in Roman literature.

Also listed as CLCV 3702.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

ENGL 3010 [0.5 credit]**The Secret Lives of Poems**

This course is designed to enable students to develop skills in reading and writing about great works of poetry. Course requirements will feature a combination of creative and critical exercises, but no formal essay.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3011 [0.5 credit]**Comics and Graphic Novels**

An introduction to the critical study of comic books and graphic narrative.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3105 [0.5 credit]**History of Literary Theory**

Introduction to ideas about literature, aesthetics, authorship, and readership as these have circulated in periods before the twentieth century.

Precludes additional credit for ENGL 3000 (no longer offered), and ENGL 3001 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3106 [1.0 credit]**Theories and Critical Practices**

This course offers students an interdisciplinary foundation in cultural, critical, and literary theories and practices. This course is writing attentive.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3200 [0.5 credit]**Topics in Medieval Literature**

A study of selected topics and texts from medieval literature.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3201 [1.0 credit]**European Literature**

Major movements and works from Dante's Divine Comedy through Voltaire's *Candide*. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.

Also listed as HUMS 3200.

Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program for Humanities Students. English students should have third year standing with a CGPA of 8.0 or higher.

Lectures three hours a week.

ENGL 3202 [0.5 credit]**Chaucer**

A study of Chaucer's works including some attention to the Middle English language in which he wrote.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3204 [0.5 credit]**Literary Representations of Childhood and Youth**

An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction).

Also listed as CHST 3204.

Prerequisite(s): third-year standing.

Lecture three hours a week.

ENGL 3305 [0.5 credit]**Shakespeare and the Stage**

Introduction to the study of early modern play-texts written by Shakespeare and/or his contemporaries.

Precludes additional credit for ENGL 3304 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3306 [0.5 credit]**Shakespeare and Film**

A study of film adaptations of selected plays by Shakespeare.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3401 [0.5 credit]**The Book in the Digital Age**

A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms.

Also listed as DIGH 3001.

Prerequisite(s): third-year standing, or permission of the English Department.

Lecture three hours a week.

ENGL 3402 [0.5 credit]**18th-Century Literature**

A detailed study of authors and movements of the period 1660 to 1780.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3414 [0.5 credit]**Introduction to Professional Writing and Editing**

The fundamental skills of professional writing and editing, including writing for specific audiences, document design, revision strategies, copyediting.

Also listed as ALDS 3414.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week.

ENGL 3500 [0.5 credit]**Literatures and Cultures 1700-1900**

A study of the period between 1700 and 1900, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 3502 (no longer offered).

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3501 [0.5 credit]**Literatures and Cultures 1900-Now**

A study of the period between 1900 and the present, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 3502 (no longer offered).

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3553 [0.5 credit]**The 19th-Century Novel**

A study of the English novel in the 19th century.

Precludes additional credit for ENGL 3503 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3601 [0.5 credit]**20th- and 21st-Century Poetry**

A study of 20th and 21st-century poetry in English. Topics and authors may vary.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3603 [0.5 credit]**20th- and 21st-century Fiction**

A study of 20th- and 21st-century fiction in English. Topics and authors may vary.

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3605 [0.5 credit]**Modern and Contemporary Literary Theory**

Introduction to contemporary approaches to literary texts, such as formalist, structuralist, deconstructive, psychoanalytic, Marxist, historicist, and feminist. Topics may include: the nature and role of literature, of author and reader, of canons, ideology, gender, sexuality, and race. Precludes additional credit for ENGL 3002 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3608 [0.5 credit]**Topics in Theatre Management**

A workshop taught by practitioners in the community that provides students with the knowledge and skills necessary to create, manage, and sustain theatre projects. Topics will vary but may include the development of children's theatre or the operation of a festival or touring company.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Workshop three hours a week.

ENGL 3609 [0.5 credit]**Drama: Contemporary Performance**

A study of dramatic texts and performance practices in contemporary professional theatre. Topics vary according to the season programs of professional theatre in Ottawa. Students will attend a number of productions, determined by the instructor. Field trip fees will apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3702 [0.5 credit]**American Culture**

A study of American writing in its cultural and historical contexts.

Precludes additional credit for ENGL 3703 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3801 [0.5 credit]**Canadian Poetry**

A study of Canadian poetry in its social and political contexts.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

ENGL 3803 [0.5 credit]**Canadian Fiction**

A study of Canadian fiction in its social and political contexts.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

ENGL 3804 [0.5 credit]**Literature and Culture in Europe**

A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society.

Also listed as EURL 3001.

Prerequisite(s): second year standing.

Lecture and discussion three hours a week.

ENGL 3805 [0.5 credit]**Literature and Culture in Russia and Eurasia**

A survey of the literature and cultural texts that have defined Russian and neighbouring Slavic countries. Examination of fiction and non-fiction texts that have contributed to and reflected the development of Russian and Slavic culture and society.

Also listed as EURR 3002.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

ENGL 3902 [0.5 credit]**Writing Screenplays**

An intermediate workshop involving regular assignments in writing for film. Permission to register in this course requires the student to submit a writing sample.

Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Also listed as FILM 3902.

Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.

Workshops three hours a week.

ENGL 3903 [0.5 credit]**Writing Fiction (Intermediate)**

An intermediate workshop involving regular assignments in writing prose fiction and practical criticism. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.

Workshop three hours a week.

ENGL 3904 [0.5 credit]**Intermediate Drama Workshop**

A course dealing with techniques of characterization, principles of ensemble performance, scene analysis for actors and directors, styles of performance.

Includes: Experiential Learning Activity

Precludes additional credit for ENGL 2001 (no longer offered).

Prerequisite(s): ENGL 2104 or permission of the Department.

Workshop three hours a week.

ENGL 3905 [0.5 credit]**Topics in Performance**

A study of selected elements of performance. Topics will vary but may include such areas as the theory and practice of comic timing on stage or movement on stage space.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Lecture and workshop three hours a week.

ENGL 3906 [0.5 credit]**Writing Popular Fiction**

An intermediate workshop in creative writing that focuses on the development of writing skills specific to the crafting of narratives in such genres as Speculative Fiction, Young Adult Fiction, and Historical Fiction. Permission to register requires the student to submit a writing sample.

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.

Workshop three hours a week.

ENGL 3908 [0.5 credit]**Research and Theory in Academic Writing**

Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.

Includes: Experiential Learning Activity

Also listed as ALDS 3401.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ENGL 3909 [0.5 credit]**Research and Theory in Workplace Writing**

Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.

Includes: Experiential Learning Activity

Also listed as ALDS 3402.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ENGL 3910 [0.5 credit]**From Degree to Career**

This experiential-learning course prepares students in English for their transition into the workplace. Project-based activities (including readings and research) and guest speakers will teach students to identify, develop, and apply the skills and knowledge gained from a degree in English studies.

Includes: Experiential Learning Activity

Prerequisite(s): Third-year standing or permission of the department.

Lectures and workshops three hours a week.

ENGL 3911 [0.5 credit]**Cultural Studies**

This course explores cultural expression across diverse media, theorizing culture as a form of struggle that shapes material conditions, fuels knowledge production, and informs lived experience.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3915 [0.5 credit]**Special Topics in Writing**

An intermediate workshop that involves regular creative writing assignments and practical criticism based on this work. Topics will vary. Permission to register requires the student to submit a writing sample. Submission instructions and yearly special topics can be found at carleton.ca/english/.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, a 2000-level creative writing workshop, and permission of the instructor.

Workshop three hours a week.

ENGL 3916 [0.5 credit]**Spoken Word Poetry Workshop**

This intermediate-level workshop-based course explores traditions of spoken word poetry while requiring students to create and perform their own spoken word poems.

Includes: Experiential Learning Activity

Also listed as AFRI 3916.

Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.

Workshops three hours a week.

ENGL 3920 [0.5 credit]**Literary Ecological Fieldwork**

This interdisciplinary, experiential fieldwork course brings together literature, culture, and ecology studies. At least 50% of class periods will be devoted to short field work excursions in the Ottawa region. These excursions will be complemented by classroom discussion time. Field trip fees will apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Field work and lectures three hours a week.

ENGL 3930 [0.5 credit]**Topics in Decolonization and Migration II**

An intermediate study of literature, culture, and research in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3940 [0.5 credit]**Studies in Diaspora Lit.**

A study of diaspora literatures and cultures.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3960 [0.5 credit]**Studies in Indigenous Literature**

A study of Indigenous literatures and cultures.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3965 [0.5 credit]**Intro to Postcolonial Theory**

A survey of major concepts and key figures in postcolonial theory.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3972 [0.5 credit]**Studies in Postcolonial Literature**

A study of postcolonial literatures and cultures. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ENGL 4001 [0.5 credit]**Studies in Poetry**

A study of a selected topic in poetry.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4003 [0.5 credit]**Studies in the Novel**

A study of a selected topic in the novel.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4004 [0.5 credit]**Writing and Knowledge-Making in the Professions**

The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different professions shape their writing in distinctive ways and what implications this holds for theory, research, and practice.

Includes: Experiential Learning Activity

Also listed as ALDS 4404.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week.

ENGL 4005 [0.5 credit]**Studies in Literary Theory**

Study of a selected topic in literary theory and criticism.

Precludes additional credit for ENGL 4000 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4105 [0.5 credit]**Old English**

Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.

Also listed as LING 4805.

Precludes additional credit for ENGL 3102 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4115 [0.5 credit]**Culture and the Text**

Topics will vary from year to year.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4125 [0.5 credit]**Digital Culture and the Text I**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as DIGH 4002.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.

Seminar or lecture three hours a week.

ENGL 4135 [0.5 credit]**Studies in Publishing**

Topics will vary from year to year.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4145 [0.5 credit]**Digital Culture and the Text II**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as DIGH 4003.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.

Seminar or lecture three hours a week.

ENGL 4155 [0.5 credit]**Studies in Digital Humanities**

A study of current issues and debates in the Digital Humanities.

Also listed as DIGH 4001.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.

Seminar or lecture three hours a week.

ENGL 4208 [0.5 credit]**Studies in Medieval Literature**

A study of a selected topic in Medieval literature; requires previous experience reading medieval English.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4301 [0.5 credit]**Studies in Renaissance Literature**

A study of a selected topic in Renaissance literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4401 [0.5 credit]**Studies in 18th-Century Literature**

A study of a selected topic in Restoration or 18th-century literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4404 [0.5 credit]**Digital Humanities Workshop**

This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.

Includes: Experiential Learning Activity

Also listed as DIGH 4004.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.

Workshop three hours a week.

ENGL 4405 [0.5 credit]**Digital Humanities Practicum**

Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.

Includes: Experiential Learning Activity

Also listed as DIGH 4005.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.

Practicum.

ENGL 4414 [0.5 credit]**Professional Writing I**

The role of writing in government and NGOs.

Consideration of various genres, practices and styles of government and NGO writing, including grant proposals, administrative reports, press releases, briefing notes, recommendation reports.

Includes: Experiential Learning Activity

Also listed as ALDS 4414.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week. May include a work placement.

ENGL 4415 [0.5 credit]**Professional Writing II**

The role of writing in science-related fields and in the health professions. Consideration of various genres, practices and styles of scientific and health-related writing, including research reports, grant proposals, case reports, popularizations of science, press releases.

Includes: Experiential Learning Activity

Also listed as ALDS 4415.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week. May include a work placement.

ENGL 4500 [0.5 credit]**Studies in Romanticism**

A study of a selected topic, 1770-1830.

Precludes additional credit for ENGL 4407 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4515 [0.5 credit]**Teaching Writing in School and the Workplace**

Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching.

Includes: Experiential Learning Activity

Also listed as ALDS 4405.

Prerequisite(s): third-year standing, or permission of the instructor.

Seminar three hours a week.

ENGL 4550 [0.5 credit]**Studies in Victorian Literature**

A study of a selected topic in 19th-century British literature, 1830-1900.

Precludes additional credit for ENGL 4501 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4600 [0.5 credit]**The Great Russian Novel**

A study of masterpieces of the Russian tradition, to be selected from among works by writers such as Tolstoy, Dostoevsky, Gogol, Turgenev, Bely, Bulgakov, and Nabokov. All novels will be read in English translation.

Also listed as EURL 4103.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4601 [0.5 credit]**Studies in Contemporary Poetry**

A comparative and transnational approach to 20th- and 21st -century poetry.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4605 [0.5 credit]**Theatre Production Seminar**

This course offers students advanced engagement with the theory and application of theatrical crafts and includes participation in a writing, acting, or technical capacity on a class production.

Includes: Experiential Learning Activity

Prerequisite(s): ENGL 3904 or permission of the department.

Seminar three hours a week.

ENGL 4607 [0.5 credit]**Studies in 20th- and 21st-century Literature**

A study of a selected topic in literature of the 20th and 21st century.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4609 [0.5 credit]**Global Stages and Theories**

An advanced study of dramatic texts from transnational, postcolonial, or European contexts. This course will offer sustained attention to specific theatre traditions, theatrical practice, and interpretation of texts. Topics and points of emphasis vary from year to year.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4708 [0.5 credit]**Studies in American Literature I**

A study of a selected topic in American literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4709 [0.5 credit]**Studies in American Literature II**

A study of a selected topic in American literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4802 [0.5 credit]**Race, Ethnicity and Canadian Lit.**

A study of Canadian literature that engages with notions of race and ethnicity.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4806 [0.5 credit]**Studies in Canadian Literature I**

A study of a selected topic in Canadian literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4807 [0.5 credit]**Studies in Canadian Literature II**

A study of a selected topic in Canadian literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4908 [1.0 credit]**Independent Study**

Independent research and writing, under the supervision of English faculty, requiring an essay of approximately 10,000 words. A written proposal outlining the project must be submitted to the undergraduate supervisor by July 31.

Not available to students in a Combined Honours program.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in English with a CGPA of 10.0 in English courses, and permission of the undergraduate supervisor.

ENGL 4909 [0.5 credit]**Writing and Knowledge-Making in the Disciplines**

The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.

Includes: Experiential Learning Activity

Also listed as ALDS 4403.

Precludes additional credit for LALS 5406 (no longer offered) or ALDS 5602 (no longer offered) or LALS 5602 (no longer offered).

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ENGL 4910 [0.5 credit]**Independent Creative Writing Project**

Independent creative writing, under the supervision of Departmental faculty, requiring the production of a poetry manuscript (10-15 poems), a one-act play, a 10,000-word novella, or two short stories. A written proposal outlining the project must be submitted to the faculty supervisor by July 31.

Includes: Experiential Learning Activity

Prerequisite(s): completion of required credits for the Creative Writing Concentration, fourth-year Honours standing in English with a CGPA OF 10.0 in English courses, and permission of the Undergraduate Supervisor in conjunction with the faculty supervisor.

ENGL 4915 [0.5 credit]**Advanced Writing Workshop**

An advanced workshop involving regular assignments in creative writing and practical criticism based on this work. Topics will vary.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in English, a 3000-level creative writing workshop, or permission of the instructor. Permission to register in this course requires the student to submit a writing sample. Instructions on this process and on yearly special topics can be found at carleton.ca/english.

Workshop three hours a week.

ENGL 4947 [0.5 credit]**Issues in Diaspora Literature**

A study of a selected topic in diaspora literature and culture.

Precludes additional credit for ENGL 4907 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4950 [0.5 credit]**Topics in Postcolonial and Diaspora Lit. and Theory**

A study of a selected topic in postcolonial and/or diaspora literatures and theories. Themes, authors, and geographical and temporal focus will vary.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4960 [0.5 credit]**Indigenous Literatures I**

A study of the literatures produced by Indigenous storytellers and writers, with a focus on the oral tradition and life writing.

Precludes additional credit for ENGL 4808 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4961 [0.5 credit]**Indigenous Literatures II**

A study of the contemporary period of Indigenous literature, examining the historical and mythic influences on the literature.

Precludes additional credit for ENGL 4808 and ENGL 4809 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4975 [0.5 credit]**Issues in Postcolonial Theory**

A study of a selected issue in postcolonial and/or diaspora theory.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4976 [0.5 credit]**Issues in Postcolonial Literature**

A study of a selected topic in postcolonial literature and culture.

Precludes additional credit for ENGL 4906 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

Environmental and Climate Humanities (Minor)

This section presents the requirements for programs in:

- Minor in Environmental and Climate Humanities

Minor in Environmental and Climate Humanities (4.0 credits)

This minor is open to all undergraduate degree students.

Requirements:

1. 0.5 credit in:		0.5
EACH 2000 [0.5]	Introduction to the Environmental and Climate Humanities	
2. 0.5 credit from Science-inflected Courses:		0.5
BIOL 1902 [0.5]	Natural History	
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 2402 [0.5]	Climate Change: An Earth Sciences Perspective	
ERTH 4303 [0.5]	Resources of a Finite Earth	
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
GEOG 2020 [0.5]	Ecosystems of Canada	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
ISCI 1001 [0.5]	Introduction to the Environment	
ISCI 2002 [0.5]	Human Impacts on the Environment	
3. 1.5 credit from Humanities-inflected Courses:		1.5
ANTH 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research	
or SOCI 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research	
ANTH 2510 [0.5]	Theories of Human Nature	
ANTH 2850 [0.5]	Development and Underdevelopment	
ANTH 3035 [0.5]	Science, Culture and Society: Social Studies of Science	
ANTH 3355 [0.5]	Anthropology and the Environment	
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology	
ANTH 4036 [0.5]	Science and Technology Studies: Selected Topics	
ANTH 4355 [0.5]	Anthropology of Natural Resources	
ANTH 4560 [0.5]	Economic Anthropology	
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples	
CDNS 4400 [0.5]	Space, Landscape and Identity in Canada	

CDNS 4403 [0.5]	Heritage Conservation and Sustainability in Canada	
COMS 2500 [0.5]	Communication and Science	
COMS 4311 [0.5]	Environmental Communication	
ENGL 1700 [0.5]	Climate Change and the Humanities	
ENGL 2730 [0.5]	Culture and Climate Change	
ENGL 3920 [0.5]	Literary Ecological Fieldwork	
FILM 2204 [0.5]	Indigenous Cinema and Media	
HIST 2311 [0.5]	Environmental History of Canada	
HIST 2913 [0.5]	History of Oil	
HIST 3310 [0.5]	Animals in History	
HUMR 3503 [0.5]	Global Environmental Justice	
HUMR 3504 [0.5]	Public Health and Human Rights	
HUMR 4907 [0.5]	Special Topic in Human Rights	
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality	
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy	
INDG 4015 [0.5]	Land as a Relation	
PHIL 2380 [0.5]	Introduction to Environmental Ethics	
PHIL 3380 [0.5]	Environments, Technology and Values	
RELI 2800 [0.5]	Indigenous Traditions	
RELI 2811 [0.5]	Religions and the Environment	
SOCI 2702 [0.5]	Power and Social Change	
SOCI 3019 [0.5]	Sociology of International Migration	
SOCI 3035 [0.5]	Science, Culture and Society: Social Studies of Science	
SOCI 3038 [0.5]	Studies in Urban Sociology	
SOCI 3430 [0.5]	Studies in Collective Action and Social Movements	
SOCI 4039 [0.5]	Women in Contemporary Middle East Societies	
SXST 4105 [0.5]	Queer Ecologies	
4. 1.0 credits from Social Science-inflected Courses:		1.0
ECON 3803 [0.5]	The Economics of Natural Resources	
ECON 3804 [0.5]	Environmental Economics	
ENST 1000 [0.5]	Introduction to Environmental Studies	
ENST 1020 [0.5]	People, Places and Environments	
or GEOG 1020 [0.5]	People, Places and Environments	
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	
ENST 2500 [0.5]	Climate Change: Social Science Perspectives	
or GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
ENST 4006 [0.5]	Environmental Policy Analysis	
EURR 4304 [0.5]	Europe and International Migration	
GEOG 2200 [0.5]	Global Connections	
GEOG 2600 [0.5]	Geography Behind the Headlines	
GEOG 3022 [0.5]	Environmental and Natural Resources	
GEOG 3206 [0.5]	Health, Environment, and Society	

GEOG 3209 [0.5]	Sustainability and Environment in the South	
GEOG 3501 [0.5]	Geographies of the Canadian North	
GEOG 4004 [0.5]	Environmental Impact Assessment	
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change	
GEOG 4024 [0.5]	Seminar in Globalization	
LAWS 3800 [0.5]	Law of Environmental Quality	
LAWS 4800 [0.5]	Environment and Social Justice	
PSCI 1500 [0.5]	Technology, Nature, Power	
PSCI 1501 [0.5]	Politics of Migration	
PSCI 3608 [0.5]	Migration Governance	
PSCI 3609 [0.5]	Global Politics of Food	
PSCI 3801 [0.5]	Environmental Politics	
PSCI 4610 [0.5]	Politics of Migration Management	
PSCI 4807 [0.5]	Politics of Citizenship and Migration	
PSCI 4808 [0.5]	Global Environmental Politics	
PSCI 4817 [0.5]	International Politics of Forced Migration	
TSES 2006 [0.5]	Ecology and Culture	
TSES 3002 [0.5]	Energy and Sustainability	
TSES 4001 [0.5]	Technology and Society: Risk	
TSES 4007 [0.5]	Product Life Cycle Analysis	
TSES 4008 [0.5]	Environmentally Harmonious Lifestyles	
5. 0.5 credit in:		0.5
EACH 4000 [0.5]	Seminar in the Environmental and Climate Humanities	

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Environmental Science

This section presents the requirements for programs in:

- Environmental Science B.Sc. Honours
- Environmental Science with Concentration in Chemistry B.Sc. Honours
- Environmental Science with Concentration in Earth Sciences B.Sc. Honours
- Environmental Science with Concentration in Ecology, Biodiversity and Conservation B.Sc. Honours
- Environmental Science with Concentration in Geomatics B.Sc. Honours
- Environmental Science B.Sc. Major

Program Requirements

Course Categories

The Environmental Science program description makes use of the following course categories:

Approved Courses Outside the Faculties of Science and Engineering and Design (approved by the Environmental Science Institute)

Approved Environmental Science Electives (approved by the Environmental Science Institute)

Free Electives (see Academic Regulations for the B.Sc.)

Approved Science for Environmental Science

Courses approved by the Institute of Environmental Science include the following that comply with the Academic Regulations for the B.Sc.:

Biochemistry
Biology
Chemistry
Computer Science
Earth Science
Environmental Science
Geography
Geomatics
Mathematics and Statistics
Physics

Prohibited and Restricted Courses

Technology, Society, Environment Studies (TSES) courses are not accepted as Science Continuation courses in these programs, but may be used as Approved Environmental Science Specialization courses or as free electives.

Environmental Science

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 3.0 credits in:		3.0
ENSC 1500 [0.5]	Environmental Science Seminar	
ENSC 2000 [0.5]	Environmental Science Field Methods	
ENSC 2001 [0.5]	Earth Resources and Natural Hazards: Environmental Impacts	
ENSC 2002 [0.5]	Methods and Analysis in Environmental Science	
ENSC 3000 [0.5]	Environmental Science and Management: Theory and Practice	
ENSC 3509 [0.5]	Group Research in Environmental Science	
2. 1.0 credit in:		1.0
ENSC 4906 [1.0]	Honours Research Project	
or		
ENSC 4901 [0.5]	Directed Projects	
	and 0.5 credit from Science Faculty Electives or Science Continuation Courses at the 4000-level	
3. 2.0 credits in:		2.0
BIOL 2600 [0.5]	Ecology	
CHEM 2302 [0.5]	Analytical Chemistry I	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
GEOG 2013 [0.5]	Weather and Water	
4. 1.0 credit from:		1.0
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
GEOG 3108 [0.5]	Soil Properties	
5. 1.0 credit from:		1.0
ERTH 2402 [0.5]	Climate Change: An Earth Sciences Perspective	
ERTH 2403 [0.5]	Introduction to Oceanography	
ERTH 3205 [0.5]	Physical Hydrogeology	

6. 0.5 credit from:	0.5
BIOL 2201 [0.5] Cell Biology and Biochemistry	
BIOL 2107 [0.5] Fundamentals of Genetics	
7. 1.0 credit from Science Faculty Electives or Science Continuation Courses at the 4000 level	1.0
8. 2.0 credits from Science Faculty Electives or Science Continuation Courses	2.0
B. Credits Not Included in the Major CGPA (8.5 credits)	
9. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
10. 2.5 credits in:	2.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
CHEM 1001 [0.5] General Chemistry I	
CHEM 1002 [0.5] General Chemistry II	
ERTH 1006 [0.5] Exploring Planet Earth	
11. 0.5 credit in:	0.5
PHIL 2380 [0.5] Introduction to Environmental Ethics	
12. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)	1.5
13. 3.0 credits in free electives.	3.0
Total Credits	20.0

Environmental Science with Concentration in Chemistry

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13 credits)

1. 3.0 credits in:	3.0
ENSC 1500 [0.5] Environmental Science Seminar	
ENSC 2000 [0.5] Environmental Science Field Methods	
ENSC 2001 [0.5] Earth Resources and Natural Hazards: Environmental Impacts	
ENSC 2002 [0.5] Methods and Analysis in Environmental Science	
ENSC 3000 [0.5] Environmental Science and Management: Theory and Practice	
ENSC 3509 [0.5] Group Research in Environmental Science	
2. 1.0 credit in:	1.0
ENSC 4906 [1.0] Honours Research Project	
Or	
ENSC 4901 [0.5] and [0.5] credit Science faculty elective or science continuation at the 4000 level	
3. 2.0 credit in:	2.0
BIOL 2600 [0.5] Ecology	
CHEM 2302 [0.5] Analytical Chemistry I	
CHEM 2800 [0.5] Foundations for Environmental Chemistry	
GEOG 2013 [0.5] Weather and Water	
4. 1.0 credit from:	1.0
GEOG 3102 [0.5] Geomorphology	
GEOG 3103 [0.5] Watershed Hydrology	
GEOG 3104 [0.5] Principles of Biogeography	
GEOG 3105 [0.5] Climate and Atmospheric Change	
GEOG 3106 [0.5] Aquatic Science and Management	

GEOG 3108 [0.5] Soil Properties	
5. 0.5 credit from:	0.5
ERTH 2402 [0.5] Climate Change: An Earth Sciences Perspective	
ERTH 2403 [0.5] Introduction to Oceanography	
ERTH 3205 [0.5] Physical Hydrogeology	
6. 0.5 credit from:	0.5
BIOL 2107 [0.5] Fundamentals of Genetics	
BIOL 2201 [0.5] Cell Biology and Biochemistry	
7. 3.0 credits in:	3.0
CHEM 2203 [0.5] Organic Chemistry I	
CHEM 2204 [0.5] Organic Chemistry II	
CHEM 2303 [0.5] Analytical Chemistry II	
CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry	
CHEM 3305 [0.5] Advanced Analytical Chemistry Laboratory	
CHEM 3800 [0.5] The Chemistry of Environmental Pollutants	
8. 1.5 credits in:	1.5
Organic focus:	
CHEM 3201 [0.5] Advanced Organic Chemistry I	
CHEM 3202 [0.5] Advanced Organic Chemistry II	
CHEM 3205 [0.5] Experimental Organic Chemistry	
or	
Inorganic focus:	
i) 1.0 credit in:	
CHEM 3503 [0.5] Inorganic Chemistry I	
CHEM 3504 [0.5] Inorganic Chemistry II	
ii) 0.5 credit in CHEM at the 4000-level	
9. 0.5 credit in:	0.5
CHEM 4800 [0.5] Atmospheric Chemistry	
B. Credits not included in the Major CGPA (7.0 credits)	
10. 1.5 credit in:	1.5
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
11. 2.5 credits in:	2.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
CHEM 1001 [0.5] General Chemistry I	
CHEM 1002 [0.5] General Chemistry II	
ERTH 1006 [0.5] Exploring Planet Earth	
12. 0.5 credit in:	0.5
PHIL 2380 [0.5] Introduction to Environmental Ethics	
13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)	1.5
14. 1.0 credit in free elective	1.0
Total Credits	20.0

Environmental Science with Concentration in Earth Sciences

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 3.0 credits from:	3.0
ENSC 1500 [0.5] Environmental Science Seminar	

ENSC 2000 [0.5]	Environmental Science Field Methods	
ENSC 2001 [0.5]	Earth Resources and Natural Hazards: Environmental Impacts	
ENSC 2002 [0.5]	Methods and Analysis in Environmental Science	
ENSC 3000 [0.5]	Environmental Science and Management: Theory and Practice	
ENSC 3509 [0.5]	Group Research in Environmental Science	
2. 1.0 credit in:		1.0
ENSC 4906 [1.0]	Honours Research Project	
Or		
ENSC 4901 [0.5] and [0.5] credit Science faculty elective or science continuation at the 4000 level		
3. 2.0 credits in:		2.0
BIOL 2600 [0.5]	Ecology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
GEOG 2013 [0.5]	Weather and Water	
GEOG 3108 [0.5]	Soil Properties	
4. 4.0 credits in:		4.0
ERTH 2102 [0.5]	Mineralogy to Petrology	
ERTH 2104 [0.5]	Igneous Systems, Geochemistry and Processes	
ERTH 2314 [0.5]	Sedimentation and Stratigraphy	
ERTH 2406 [0.5]	Geology and Map Interpretation	
ERTH 3003 [0.5]	Geochemistry and Geochronology	
ERTH 3205 [0.5]	Physical Hydrogeology	
ERTH 3405 [0.5]	Geophysical Methods	
ERTH 3806 [0.5]	Structural Geology	
5. 0.5 credit from:		0.5
ERTH 3203 [0.5]	Sedimentology	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	
6. 1.0 credit in EARTH at the 4000-level		1.0
B. Credits Not Included in the Major CGPA (8.5 credits)		
7. 1.5 credits in:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
8. 3.0 credits in:		3.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
PHYS 1007 [0.5]	Elementary University Physics I	
9. 1.5 credits from:		1.5
CHEM 2302 [0.5]	Analytical Chemistry I	
ERTH 2402 [0.5]	Climate Change: An Earth Sciences Perspective	
ERTH 2403 [0.5]	Introduction to Oceanography	
ERTH 2802 [0.5]	Field Geology I	
ERTH 2312 [0.5]	Paleontology	
ERTH 3203 [0.5]	Sedimentology	
ERTH 3204 [0.5]	Mineral Deposits	
ERTH 3206 [0.5]	Sedimentary Depositional Systems	

ERTH 3207 [0.5]	Metamorphic Petrology and Processes	
ENSC 3906 [0.5]	Project Planning for Environmental Research	
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
10. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000), including:		1.5
PHIL 2380 [0.5]	Introduction to Environmental Ethics	
11. 1.0 credit in:		1.0
GEOG 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
GEOG 3002 [0.5]	Introduction to Remote Sensing	
Total Credits		20.0

Environmental Science with Concentration in Ecology, Biodiversity and Conservation B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 3.0 credits in:		3.0
ENSC 1500 [0.5]	Environmental Science Seminar	
ENSC 2000 [0.5]	Environmental Science Field Methods	
ENSC 2001 [0.5]	Earth Resources and Natural Hazards: Environmental Impacts	
ENSC 2002 [0.5]	Methods and Analysis in Environmental Science	
ENSC 3000 [0.5]	Environmental Science and Management: Theory and Practice	
ENSC 3509 [0.5]	Group Research in Environmental Science	
2. 1.0 credit in:		1.0
ENSC 4906 [1.0]	Honours Research Project	
Or		
ENSC 4901 [0.5] and [0.5] credit Science faculty elective or science continuation at the 4000 level		
3. 2.0 credit in:		2.0
BIOL 2600 [0.5]	Ecology	
CHEM 2302 [0.5]	Analytical Chemistry I	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
GEOG 2013 [0.5]	Weather and Water	
4. 1.0 credit from:		1.0
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
GEOG 3108 [0.5]	Soil Properties	
5. 1.0 credit from:		1.0
ERTH 2402 [0.5]	Climate Change: An Earth Sciences Perspective	
ERTH 2403 [0.5]	Introduction to Oceanography	
ERTH 2305 [0.5]	Physical Hydrogeology	

6. 0.5 credit from Science faculty elective or science continuation at the 4000 level	0.5
7. 4.0 credits in:	4.0
a. 1.5 credit in:	
BIOL 2001 [0.5] Animals: Form and Function	
BIOL 2002 [0.5] Plants: Form and Function	
BIOL 2201 [0.5] Cell Biology and Biochemistry	
b. 0.5 credit from:	
BIOL 2303 [0.5] Microbiology	
BIOL 3004 [0.5] Insect Diversity	
BIOL 3102 [0.5] Mycology	
BIOL 3205 [0.5] Plant Biochemistry and Physiology	
c. 2.0 credits in a focus:	
Ecology focus:	
i) 0.5 credit in:	
BIOL 3604 [0.5] Statistics for Biologists	
ii) 1.0 credit from:	
BIOL 3601 [0.5] Ecosystems and Environmental Change	
BIOL 3602 [0.5] Conservation Biology	
BIOL 3605 [0.5] Field Course I	
BIOL 3606 [0.5] Field Course II	
iii) 0.5 credit BIOL at the 4000-level	
or	
Microbiology/genetics focus:	
i) 1.0 credit from:	
BIOL 3104 [0.5] Molecular Genetics	
BIOL 4103 [0.5] Population Genetics	
ii) 0.5 credit from:	
BIOL 2303 [0.5] Microbiology	
BIOL 3102 [0.5] Mycology	
BIOL 3303 [0.5] Experimental Microbiology	
iii) 0.5 credit BIOL at the 4000-level	
B. Credits Not Included in the Major CGPA (7.5 credits)	
8. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
9. 2.5 credits in:	2.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
CHEM 1001 [0.5] General Chemistry I	
CHEM 1002 [0.5] General Chemistry II	
ERTH 1006 [0.5] Exploring Planet Earth	
10. 0.5 credit in:	0.5
PHIL 2380 [0.5] Introduction to Environmental Ethics	
11. 0.5 credit from:	0.5
BIOL 2107 [0.5] Fundamentals of Genetics	
12. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)	1.5
13. 1.5 credit in free electives.	1.5
Total Credits	20.0

Environmental Science with Concentration in Geomatics

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 3.0 credits in:	3.0
ENSC 1500 [0.5] Environmental Science Seminar	
ENSC 2000 [0.5] Environmental Science Field Methods	
ENSC 2001 [0.5] Earth Resources and Natural Hazards: Environmental Impacts	
ENSC 2002 [0.5] Methods and Analysis in Environmental Science	
ENSC 3000 [0.5] Environmental Science and Management: Theory and Practice	
ENSC 3509 [0.5] Group Research in Environmental Science	
2. 1.0 credit in:	1.0
ENSC 4906 [1.0] Honours Research Project	
or	
ENSC 4901 [0.5] Directed Projects	
or	
GEOM 4005 [0.5] Directed Studies in Geomatics and 0.5 credit 4000-level Approved Science for Environmental Science	
3. 2.0 credit in:	2.0
BIOL 2600 [0.5] Ecology	
CHEM 2302 [0.5] Analytical Chemistry I	
CHEM 2800 [0.5] Foundations for Environmental Chemistry	
GEOG 2013 [0.5] Weather and Water	
4. 1.0 credit from:	1.0
GEOG 3102 [0.5] Geomorphology	
GEOG 3103 [0.5] Watershed Hydrology	
GEOG 3104 [0.5] Principles of Biogeography	
GEOG 3105 [0.5] Climate and Atmospheric Change	
GEOG 3106 [0.5] Aquatic Science and Management	
GEOG 3108 [0.5] Soil Properties	
5. 1.0 credit from:	1.0
ERTH 2402 [0.5] Climate Change: An Earth Sciences Perspective	
ERTH 2403 [0.5] Introduction to Oceanography	
ERTH 3205 [0.5] Physical Hydrogeology	
6. 3.5 credits in:	3.5
GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution	
GEOM 2005 [0.5] Introduction to Geospatial Programming	
GEOM 2007 [0.5] Vector GIS: Points, Lines and Polygons	
GEOM 2008 [0.5] Raster GIS: Pixels and Grids	
GEOM 3002 [0.5] Introduction to Remote Sensing	
GEOM 3005 [0.5] Geospatial Analysis	
GEOG 3003 [0.5] Quantitative Geography	
7. 1.5 credits from:	1.5
GEOM 4001 [0.5] Special Topics in Geomatics	
GEOM 4003 [0.5] Remote Sensing of the Environment	

GEOM 4008 [0.5]	Advanced Topics in Geographic Information Systems	
GEOM 4009 [0.5]	Custom Geomatics Applications	
B. Credits not included in the Major CGPA (7.0 credits)		
8. 1.5 credit in:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I or GEOG 2006 [0.5] Introduction to Quantitative Research	
9. 2.5 credits in:		2.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
10. 0.5 credit in:		0.5
PHIL 2380 [0.5]	Introduction to Environmental Ethics	
11. 0.5 credit from:		0.5
BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
12. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)		1.5
13. 0.5 credit in free elective		0.5
Total Credits		20.0

Environmental Science

B.Sc. Major (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 2.5 credits in:		2.5
ENSC 1500 [0.5]	Environmental Science Seminar	
ENSC 2000 [0.5]	Environmental Science Field Methods	
ENSC 2001 [0.5]	Earth Resources and Natural Hazards: Environmental Impacts	
ENSC 2002 [0.5]	Methods and Analysis in Environmental Science	
ENSC 3000 [0.5]	Environmental Science and Management: Theory and Practice	
2. 2.0 credit in:		2.0
BIOL 2600 [0.5]	Ecology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
CHEM 2302 [0.5]	Analytical Chemistry I	
GEOG 2013 [0.5]	Weather and Water	
3. 1.0 credit from:		1.0
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
GEOG 3108 [0.5]	Soil Properties	
4. 1.0 credit from:		1.0
ERTH 2402 [0.5]	Climate Change: An Earth Sciences Perspective	
ERTH 2403 [0.5]	Introduction to Oceanography	
ERTH 3205 [0.5]	Physical Hydrogeology	

5. 0.5 credit from		0.5
BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
6. 1.0 credits from Science faculty electives or science continuation at the 4000 level		1.0
7. 2.0 credits from Science faculty electives or science continuation courses		2.0
B. Credits Not Included in the Major CGPA (10.0 credits)		
8. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
9. 2.5 credits in:		2.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
10. 0.5 credit in:		0.5
PHIL 2380 [0.5]	Introduction to Environmental Ethics	
11. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)		1.5
12. 4.5 credits in free electives.		4.5
Total Credits		20.0

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
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CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface

GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)
BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.
CHEM (Chemistry)
COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
ENSC (Environmental Science)
FOOD (Food Science and Nutrition)
GEOM (Geomatics)
HLTH (Health Sciences)
ISAP (Interdisciplinary Science Practice)
MATH (Mathematics)

NEUR (Neuroscience)
PHYS (Physics), except PHYS 2903
Science Geography Courses (see list above)
Science Psychology Courses (see list above)
STAT (Statistics)
TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)
BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
COMP (Computer Science) except COMP 1001
ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
Engineering
ENSC 2001
FOOD (Food Science and Nutrition)
GEOM (Geomatics)
HLTH (Health Science)
ISAP (Interdisciplinary Science Practice)
MATH (Mathematics)
NEUR (Neuroscience)
PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
Science Geography (see list above)
Science Psychology (see list above)
STAT (Statistics)
TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin

their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Environmental Science: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Environmental Science students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: ENSC 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include

Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Environmental Science (ENSC) Courses

ENSC 1500 [0.5 credit]

Environmental Science Seminar

The purpose and nature of the program; society's view on the natural and human-modified environment; major environmental issues and their scientific aspects; preparation and presentation of paper and seminars.

Includes: Experiential Learning Activity

Prerequisite(s): enrolment in the Environmental Science program.

Lectures, seminars and workshops four hours a week.

ENSC 2000 [0.5 credit]

Environmental Science Field Methods

A field-based course introducing students to practical methods in environmental science. Topics will include earth sciences, geography, biology, and chemistry related aspects of environmental sciences and will focus on quantitative techniques to assess environmental impacts and management. A supplementary fee will apply.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 1006 and BIOL 1004 or BIOL 1104, CHEM 1001 and CHEM 1002 and permission of the Institute.

Field trips, lectures and workshops, seven hours per week (delivered on a single day and on up to two mandatory weekend trips).

ENSC 2001 [0.5 credit]

Earth Resources and Natural Hazards: Environmental Impacts

Environmental impact of mineral, energy and water resource exploitation and impact of hazardous Earth processes such as volcanic eruptions, earthquakes and others: their prediction and mitigation.

Lectures three hours per week.

ENSC 2002 [0.5 credit]

Methods and Analysis in Environmental Science

Study and application of qualitative and quantitative techniques in environmental science, including study design, data collection and assembly, database manipulation, data analysis, and critically evaluating scientific information.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 2507 or permission from the Institute.

Lectures and seminars three hours a week.

ENSC 3000 [0.5 credit]

Environmental Science and Management: Theory and Practice

Theoretical and practical perspectives related to environmental science and management; Emphasis on real-world problems associated with human activities and development of solutions in natural and built environments; Hands-on experience with environmental monitoring and restoration. A supplementary fee will apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Environmental Science or permission of the Institute.

Field trips, lectures and workshops, 7 hours per week (delivered on a single day).

ENSC 3106 [0.5 credit]

Aquatic Science and Management

Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation.

Includes: Experiential Learning Activity

Also listed as GEOG 3106.

Prerequisite(s): third-year standing and a second year science or engineering course.

Workshop four hours per week.

ENSC 3509 [0.5 credit]

Group Research in Environmental Science

Major project relating to an issue involving environmental science; effective methods of team research and presentation of group work. May include field work during class time or on weekends.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Honours Environmental Science program or permission of the Institute.

Lectures, seminars and workshops three hours a week.

ENSC 3700 [0.5 credit]

Topics in Environmental Science

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): Third year standing in the Environmental Science program or permission of the Institute.

ENSC 3906 [0.5 credit]

Project Planning for Environmental Research

Independent or group study on the fundamentals of scientific investigation, which may include use of literature, learning of research techniques, and development of a research proposal, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): Good standing in third year Environmental Science and permission of the Institute.

ENSC 3999 [0.0 credit]**Co-operative Work Term**

Practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Environmental Science Co-operative Option and permission of the Institute. Four-month work term.

ENSC 4001 [0.5 credit]**Environmental Science Practicum**

Experience working in the environmental science sector, applying academic training to practical environmental issues. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Environmental Science program.
practicum

ENSC 4002 [0.5 credit]**Environmental Decisions**

The regulatory and scientific aspects of environmental management decisions, including risk analysis and mitigation, managing chronic and acute environmental impacts, and conservation of species and landscapes. Students will use real-world case studies to learn traditional and cutting-edge decision-making tools.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in any B.Sc. program or permission of the Institute.

Workshops three hours per week.

ENSC 4003 [0.5 credit]**Food Systems and the Environment**

This course explores issues of food systems and their sustainability. We will discuss aspects of food systems, including production, distribution, consumption, waste management, and their impact on communities and the environment.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in B.Sc. or B.HSc. program or permission of the Institute.

Lecture three hours per week.

ENSC 4005 [0.5 credit]**Environmental Solutions and Sustainability Science**

Focus on conceptualization and application of different knowledges and knowledge systems to complex, interdisciplinary real-world problems through an environmental lens. Development of skills and mindset needed to generate creative solutions that will be embraced by diverse publics and decision makers.

Includes: Experiential Learning Activity

Precludes additional credit for ENSC 4700A if taken in Winter term 2021 or Winter term 2022.

Prerequisite(s): Third year standing in B.Sc. programs in Environmental Science, Interdisciplinary Science and Practice, Earth Science, Biology, and Geography and B.A. programs in Biology and Geography, or permission of the Institute.

Lecture, seminar, or workshops three hours a week.

ENSC 4700 [0.5 credit]**Topics in Environmental Science**

Prerequisite(s): third-year standing in the Environmental Science program or permission of the Institute.

Lectures and discussion three hours a week.

ENSC 4901 [0.5 credit]**Directed Projects**

Independent or group study, for fourth-year students to explore a particular project, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Institute. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

ENSC 4906 [1.0 credit]**Honours Research Project**

An independent investigation into an aspect of environmental science supervised by a member of the faculty. Approval of the topic and the research schedule must be obtained from the project supervisor and the course coordinator before the last date for registration.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Honours Environmental Science program, a major CGPA 8.0 and permission of the Institute.

independent study

Environmental Studies

This section presents the requirements for programs in:

- Environmental Studies B.A. Honours
- Environmental Studies B.A.
- Minor in Environmental Studies

Program Requirements**Approved Environmental Studies Electives**

Please note that the Approved Electives below may have prerequisite requirements or could be cross-listed.

Architecture

ARCU 3902 [0.5]	Urban Studies
ARCC 3004 [0.5]	Workshop: Energy and Form
ARCC 4103 [0.5]	Energy and Form
ARCH 4105 [0.5]	Theories of Landscape Design
ARCH 4201 [0.5]	History of Modern Housing
ARCU 4103 [0.5]	Cities
ARCU 4700 [0.5]	Urban Utopias

Biology

BIOL 1010 [0.5]	Biotechnology and Society
BIOL 1902 [0.5]	Natural History
BIOL 2600 [0.5]	Ecology
BIOL 2903 [0.5]	Natural History and Ecology of Ontario
BIOL 3601 [0.5]	Ecosystems and Environmental Change
BIOL 3602 [0.5]	Conservation Biology

Business

BUSI 3119 [0.0]	Business and Environmental Sustainability
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Earth Sciences

ERTH 2402 [0.5]	Climate Change: An Earth Sciences Perspective
ERTH 2403 [0.5]	Introduction to Oceanography
ERTH 2415 [0.5]	Natural Disasters
ERTH 4303 [0.5]	Resources of a Finite Earth

Economics

ECON 3803 [0.5]	The Economics of Natural Resources
ECON 3804 [0.5]	Environmental Economics

English

ENGL 3920 [0.5]	Literary Ecological Fieldwork
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Environmental Science

ENSC 2001 [0.5]	Earth Resources and Natural Hazards: Environmental Impacts
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Environmental Studies

ENST 1020 [0.5]	People, Places and Environments
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions
ENST 2005 [0.5]	Introduction to Qualitative Research
ENST 2006 [0.5]	Introduction to Quantitative Research
ENST 2500 [0.5]	Climate Change: Social Science Perspectives
ENST 3900 [0.5]	Honours Field Course
ENST 4001 [0.5]	Environmental Studies Practicum I
ENST 4002 [0.5]	Environmental Studies Practicum II
ENST 4005 [0.5]	Directed Studies in Environmental Studies
ENST 4006 [0.5]	Environmental Policy Analysis
ENST 4007 [0.5]	Special Topics in Geography and Environmental Studies

ENST 4050 [0.5]	Environmental and Geographic Education
ENST 4400 [0.5]	Field Studies
ENST 4450 [0.5]	Community-Engaged Research

First Year Seminars

FYSM 1101 [1.0]	Location is Everything
FYSM 1107 [1.0]	Social Justice and the City
FYSM 1108 [0.5]	Sustainable Environments
FYSM 1610 [1.0]	Understanding Environmental Discourse

Geomatics

GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution
GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons
GEOM 3002 [0.5]	Introduction to Remote Sensing
GEOM 3005 [0.5]	Geospatial Analysis
GEOM 4003 [0.5]	Remote Sensing of the Environment
GEOM 4009 [0.5]	Custom Geomatics Applications

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 1020 [0.5]	People, Places and Environments
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 2020 [0.5]	Ecosystems of Canada
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives
GEOG 2600 [0.5]	Geography Behind the Headlines
GEOG 3001 [0.5]	Doing Qualitative Research
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3022 [0.5]	Environmental and Natural Resources
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3024 [0.5]	Understanding Globalization
GEOG 3030 [0.5]	Regional Field Excursion
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3108 [0.5]	Soil Properties
GEOG 3206 [0.5]	Health, Environment, and Society
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
GEOG 3501 [0.5]	Geographies of the Canadian North
GEOG 3700 [0.5]	Population Geography
GEOG 4004 [0.5]	Environmental Impact Assessment
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change

GEOG 4023 [0.5]	Seminar in Special Topics on the City
GEOG 4323 [0.5]	Urban and Regional Planning
GEOG 4450 [0.5]	Community-Engaged Research

History

HIST 2311 [0.5]	Environmental History of Canada
HIST 3209 [0.5]	Canadian Urban History
HIST 3310 [0.5]	Animals in History

Human Rights

HUMR 3503 [0.5]	Global Environmental Justice
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Indigenous Studies

INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence

Interdisciplinary Science

ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment

Law

LAWS 3005 [0.5]	Law and Regulation
LAWS 3800 [0.5]	Law of Environmental Quality
LAWS 4800 [0.5]	Environment and Social Justice

Philosophy

PHIL 3350 [0.5]	Philosophy, Ethics, and Public Affairs
PHIL 3380 [0.5]	Environments, Technology and Values

Political Science

PSCI 2003 [0.5]	Canadian Political Institutions
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3801 [0.5]	Environmental Politics
PSCI 4808 [0.5]	Global Environmental Politics

Sociology and Anthropology

SOCI 2035 [0.5]	Technology, Culture and Society
SOCI 2040 [0.5]	Food, Culture and Society
ANTH 2850 [0.5]	Development and Underdevelopment
SOCI 3038 [0.5]	Studies in Urban Sociology
ANTH 3355 [0.5]	Anthropology and the Environment
SOCI 3805 [0.5]	Studies in Population
ANTH 4036 [0.5]	Science and Technology Studies: Selected Topics

Technology, Society, Environment

TSES 2006 [0.5]	Ecology and Culture
TSES 3001 [0.5]	Technology-Society Interactions
TSES 3002 [0.5]	Energy and Sustainability
TSES 4001 [0.5]	Technology and Society: Risk
TSES 4002 [0.5]	Technology and Society: Forecasting

TSES 4003 [0.5]	Technology and Society: Innovation
TSES 4007 [0.5]	Product Life Cycle Analysis
TSES 4008 [0.5]	Environmentally Harmonious Lifestyles

Bachelor of Arts

Environmental Studies

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit in:	1.0
ENST 1000 [0.5]	Introduction to Environmental Studies
or ENST 1020 [0.5]	People, Places and Environments
GEOG 1010 [0.5]	Global Environmental Systems
2. 1.0 credit in:	1.0
ENST 2000 [0.5]	Environmental Justice
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions
3. 0.5 credit from:	0.5
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 2020 [0.5]	Ecosystems of Canada
4. 1.0 credit in:	1.0
ENST 2005 [0.5]	Introduction to Qualitative Research
ENST 2006 [0.5]	Introduction to Quantitative Research
5. 1.0 credit in:	1.0
ENST 3000 [0.5]	Nature, Environment and Society
ENST 3022 [0.5]	Environmental and Natural Resources
6. 0.5 credit from:	0.5
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing
PHIL 2380 [0.5]	Introduction to Environmental Ethics
7. 1.0 credit from:	1.0
ECON 3804 [0.5]	Environmental Economics
GEOG 3206 [0.5]	Health, Environment, and Society
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3501 [0.5]	Geographies of the Canadian North
HUMR 3503 [0.5]	Global Environmental Justice
LAWS 3800 [0.5]	Law of Environmental Quality
PHIL 3380 [0.5]	Environments, Technology and Values
PSCI 3801 [0.5]	Environmental Politics
TSES 3002 [0.5]	Energy and Sustainability
8. 0.5 credit from:	0.5
ENST 3900 [0.5]	Honours Field Course
GEOG 3030 [0.5]	Regional Field Excursion
9. 0.5 credit in:	0.5
ENST 4000 [0.5]	Environmental Studies Seminar
10. 0.5 credit from:	0.5
ENST 4006 [0.5]	Environmental Policy Analysis
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change
GEOG 4023 [0.5]	Seminar in Special Topics on the City

GEOG 4004 [0.5]	Environmental Impact Assessment	
ENST 4050 [0.5]	Environmental and Geographic Education	
11. 1.0 credit in:		1.0
a) Thesis pathway		
1.0 credit from:		
ENST 4906 [1.0]	Honours Research Project	
ENST 4907 [1.0]	Honours Research Essay	
or		
b) Course pathway		
1.0 credit in Approved Environmental Studies Electives at the 4000 level		
12. 0.5 credit in:		0.5
a) Co-op students must complete:		
Approved Environmental Studies electives at 4000 level, excluding ENST 4001 and ENST 4002		
b) All other students must complete one of:		
ENST 4001 [0.5]	Environmental Studies Practicum I	
ENST 4002 [0.5]	Environmental Studies Practicum II	
13. 1.0 credit in	Approved Environmental Studies Electives at the 3000 level or above	1.0
14. 1.0 credit in	Approved Environmental Studies Electives	1.0
B. Credits Not Included in the Major CGPA (9.0 credits)		
15. 9.0 credits in	free electives	9.0
Total Credits		20.0

Note: It may be necessary to use some of the free elective credits to fulfill prerequisite requirements for courses in the Major.

Environmental Studies B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)		
1. 1.0 credit in:		1.0
ENST 1000 [0.5]	Introduction to Environmental Studies	
or ENST 1020 [0.5] People, Places and Environments		
GEOG 1010 [0.5]	Global Environmental Systems	
2. 1.0 credit in:		1.0
ENST 2000 [0.5]	Environmental Justice	
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	
3. 0.5 credit from:		0.5
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
GEOG 2020 [0.5]	Ecosystems of Canada	
4. 1.0 credit from:		1.0
ENST 2005 [0.5]	Introduction to Qualitative Research	
ENST 2006 [0.5]	Introduction to Quantitative Research	
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
5. 1.0 credit in:		1.0
ENST 3000 [0.5]	Nature, Environment and Society	
ENST 3022 [0.5]	Environmental and Natural Resources	
6. 0.5 credit from:		0.5

INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	
PHIL 2380 [0.5]	Introduction to Environmental Ethics	
7. 1.0 credit in	Approved Environmental Studies Electives	1.0
8. 1.0 credit in	Approved Environmental Studies Electives at the 3000 level or above	1.0
B. Credits Not Included in the Major CGPA (8.0 credits)		
9. 8.0 credits in	free electives.	8.0
Total Credits		15.0

Minor in Environmental Studies

Open to all undergraduate students not in Environmental Studies programs.

Minor in Environmental Studies (4.0 credits)

1. 1.0 credit in:		1.0
FYSM 1101 [1.0]	Location is Everything	
or FYSM 1107 [1.0] Social Justice and the City		
OR		
0.5 credit from:		
ENST 1000 [0.5]	Introduction to Environmental Studies	
FYSM 1108 [0.5]	Sustainable Environments	
ENST 1020 [0.5]	People, Places and Environments	
and 0.5 credit from:		
GEOG 1010 [0.5]	Global Environmental Systems	
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
2. 1.0 credit from:		1.0
ENST 2000 [0.5]	Environmental Justice	
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	
ENST 2500 [0.5]	Climate Change: Social Science Perspectives	
3. 1.0 credit from:		1.0
ENST 3000 [0.5]	Nature, Environment and Society	
ENST 3022 [0.5]	Environmental and Natural Resources	
GEOG 3501 [0.5]	Geographies of the Canadian North	
4. 1.0 credit from:		1.0
ENST 4006 [0.5]	Environmental Policy Analysis	
ENST 4050 [0.5]	Environmental and Geographic Education	
GEOG 3206 [0.5]	Health, Environment, and Society	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
GEOG 4004 [0.5]	Environmental Impact Assessment	
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change	
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	
Total Credits		4.0

Students should consult with the Department when planning their program and selecting courses. Some of the Environmental Studies Approved Electives have prerequisites, which are not explicitly included in the program. Students should plan to obtain all necessary

prerequisites or waivers for courses selected for this program.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental

and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as

specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Environmental Studies: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Environmental Studies program;
2. Obtained and maintained an overall minimum CGPA of 9.5 and a minimum major CGPA of 9.5;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:
 - a. the required second-year methods courses in their program (ENST 2005, ENST 2006)

- b. the required field course in their program (ENST 3900)

5. Be registered as a full-time student.

B.A. Honours Environmental Studies students must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op work term course: ENST 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are

described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Environmental Studies (ENST) Courses

ENST 1000 [0.5 credit]

Introduction to Environmental Studies

A critical introduction to the scholarly field of environmental studies, with an emphasis on society-environment entanglements. It is designed to engage with environmental issues. Possible themes include population, scarcity, institutions, commons, risks, hazards, markets, political economy, and the social construction of nature. Precludes additional credit for FYSM 1100 and ENST 1001 (no longer offered).

Lecture two hours and workshops/tutorials one hour weekly.

ENST 1020 [0.5 credit]

People, Places and Environments

Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place.

Includes: Experiential Learning Activity

Also listed as GEOG 1020.

Lectures two hours a week and tutorial one hour a week.

ENST 2000 [0.5 credit]

Environmental Justice

Contemporary and foundational theories, practice and praxis of environmental justice in Canadian and comparative settings. Combine and communicate about aspects of the physical, built and social environments to understand how uneven conditions develop. Strategies and ideas to move towards greater equity and good environmental relationships.

Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department.

Lecture two hours a week, discussion one hour a week.

ENST 2001 [0.5 credit]

Sustainable Futures: Environmental Challenges and Solutions

Individual and collective responses to pressing environmental problems. Innovative ways in which the environment can be protected and restored, taking into consideration socioeconomic, political and cultural factors. Topics include environmental lifestyles, sustainable communities, food systems, environmental design, and political activism.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department.

Lectures, seminars and field work three hours a week.

ENST 2005 [0.5 credit]

Introduction to Qualitative Research

Introduction to the research process, from generating questions through to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities.

Includes: Experiential Learning Activity

Also listed as GEOG 2005.

Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.

Lectures two hours a week, workshop two hours a week.

ENST 2006 [0.5 credit]

Introduction to Quantitative Research

Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis.

Includes: Experiential Learning Activity

Also listed as GEOG 2006.

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606.

Lectures two hours a week, laboratory two hours a week.

ENST 2500 [0.5 credit]

Climate Change: Social Science Perspectives

An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change.

Includes: Experiential Learning Activity

Also listed as GEOG 2500.

Prerequisite(s): second-year standing or permission of the department.

Lectures two hours a week, discussion groups one hour a week.

ENST 3000 [0.5 credit]**Nature, Environment and Society**

Overview of social science perspectives analyzing the relationship of society and the environment. Examination of environmental problems, solutions, conditions, and interventions through the study of concepts, theories, and research drawn from a range of scholarly approaches to questions of nature.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Environmental Studies or permission of the department.

Lecture and discussion three hours a week.

ENST 3022 [0.5 credit]**Environmental and Natural Resources**

Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources.

Includes: Experiential Learning Activity

Also listed as GEOG 3022.

Prerequisite(s): third-year standing in Geography or Environmental Studies or BGIInS Specialization/Stream in Globalization and Environment or permission of the Department.

Lecture three hours a week.

ENST 3900 [0.5 credit]**Honours Field Course**

Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year.

Includes: Experiential Learning Activity

Also listed as GEOG 3000.

Precludes additional credit for ENST 2900 (no longer offered).

Prerequisite(s): GEOG 2005/ ENST 2005 and GEOG 2006/ ENST 2006, third-year Honours standing in Environmental Studies, Geomatics, or Geography, or permission of the Department.

Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply.

Consult the department regarding course details.

ENST 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ENST 4000 [0.5 credit]**Environmental Studies Seminar**

An advanced seminar designed to provide a capstone experience that builds upon and applies the analytical skills and interdisciplinary knowledge acquired in the Environmental Studies program. Topics vary year to year and by course section (see departmental website).

Includes: Experiential Learning Activity

Prerequisite(s): Registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program.

Seminar three hours per week.

ENST 4001 [0.5 credit]**Environmental Studies Practicum I**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Prerequisite(s): registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4002 [0.5 credit]**Environmental Studies Practicum II**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the fourth year of the Environmental Studies Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4004 [0.5 credit]**Environmental Impact Assessment**

Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.

Includes: Experiential Learning Activity

Also listed as GEOG 4004.

Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.

Lectures and seminars three hours per week.

ENST 4005 [0.5 credit]**Directed Studies in Environmental Studies**

Students pursue their interest in a selected theme in environmental studies on a tutorial basis with a faculty member.

Prerequisite(s): permission of the Department.

ENST 4006 [0.5 credit]**Environmental Policy Analysis**

Critical examination of the creation, implementation and effectiveness of government policies related to environmental issues. Emphasis on perspectives, actors, institutions and social and economic relationships affecting policy responses to these issues, and on tools for analyzing the implications of specific policy choices.

Prerequisite(s): fourth-year Honours standing in Environmental Studies, Geography, or permission of the Department.

Seminar three hours per week.

ENST 4007 [0.5 credit]**Special Topics in Geography and Environmental Studies**

Selected topics in geography and/or environmental studies.

Also listed as GEOG 4007.

Precludes additional credit for GEOG 4006 (no longer offered).

Prerequisite(s): fourth-year Honours standing in the Department or permission of the Department.

Seminar three hours per week.

ENST 4022 [0.5 credit]**Seminar in People, Resources, and Environmental Change**

A selected topic or field of inquiry concerning natural resource use and environmental change.

Also listed as GEOG 4022.

Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or B.G.In.S. Specialization in Globalization and Environment, or permission of the Department.

Seminar three hours per week.

ENST 4050 [0.5 credit]**Environmental and Geographic Education**

Selected theoretical and applied issues concerning environmental and geographic education.

Also listed as GEOG 4050.

Prerequisite(s): Third-year honours standing in Geography or Environmental Studies, or permission of the Department.

Seminar three hours per week.

ENST 4400 [0.5 credit]**Field Studies**

Field observation and methodology in a selected region, special topic or contemporary problem; on an individual or group basis.

Includes: Experiential Learning Activity

Also listed as GEOG 4000.

Prerequisite(s): third-year Honours standing and permission of the Department.

Hours to be arranged.

ENST 4450 [0.5 credit]**Community-Engaged Research**

Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year.

Includes: Experiential Learning Activity

Also listed as GEOG 4450.

Prerequisite(s): fourth-year standing, or permission of the department.

Lectures, discussion and project work three hours a week.

ENST 4906 [1.0 credit]**Honours Research Project**

An independent investigation into a select aspect of environmental studies, supervised by a faculty member.

Possible outcomes might include: workshops, audio-visual productions, lay publications, and field projects accompanied by an essay demonstrating the student's capacity to critically reflect on the research project.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4909, GEOM 4909, GEOG 4906, GEOM 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.

Hours to be arranged with faculty adviser.

ENST 4907 [1.0 credit]**Honours Research Essay**

Interdisciplinary research essay on an environmental issue, carried out in consultation with a faculty supervisor. The student must consult with the undergraduate student advisor in selecting a project and a supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for ENST 4906, GEOG 4909, GEOM 4909, GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906 and GEOM 4906.

Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.

Hours to be arranged with faculty adviser.

European and Russian Studies

This section presents the requirements for programs in:

- European and Russian Studies B.A. Honours
- European and Russian Studies B.A. Combined Honours
- European and Russian Studies B.A.
- Specialization in Europe and Russia in the World B.G.In.S. Honours
- Stream in Europe and Russia in the World B.G.In.S.
- Minor in European and Russian Studies

Program Requirements

EURUS Language Requirement

All candidates in the European and Russian Studies B.A., B.A. Honours and B.A. Combined Honours programs are required to demonstrate proficiency in a major regional language. Language proficiency is defined as the completion of an intermediate level of university language instruction (two years, 2.0 Carleton credits). Students who wish to count a relevant regional language that is not taught at Carleton should consult with and request approval from the Undergraduate Supervisor.

Students in the Bachelor of Global and International Studies Specialization or Stream Europe and Russia in the World must complete the BGInS Language requirement in an approved regional language of Europe, Russia, and Eurasia. See the BGInS Language Requirement for details.

Students are encouraged to continue with language instruction beyond the intermediate level required for the Institute Language Requirement. Advanced-level regional language courses may be counted towards EURUS degree requirements (see specific program requirements for details).

This Institute Language requirement may be fulfilled in one of three ways:

1. Completion of one of the following courses (or equivalent): FREN 1100; FREN 1110; GERM 2020; GERM 2110; ITAL 2020; ITAL 2110; PORT 2110; RUSS 2020; SPAN 2020; SPAN 2110.
Courses at other institutions may also be used to meet the language requirement as long as they are accepted by the Department of French or the School of Linguistics and Language Studies as being equivalent to or at a higher level than the courses listed above.
For languages not taught at Carleton, an intermediate level is equal to two full years (2.0 Carleton credit) of university-level language instruction.
2. Certification by the unit offering the relevant language or the Institute that the student has attained a level of language proficiency equivalent to completion of one of the courses above. Proficiency may be demonstrated through documentation.
3. Secondary School Language of Instruction: Students whose secondary school transcripts show that their primary language of instruction in secondary school was a relevant regional language other than English may be exempted from the language requirement. Subject to approval of the Undergraduate Supervisor.

European and Russian Studies

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits):

1. 0.5 credit in: Foundations	0.5
EURR 1001 [0.5] Introduction to European and Russian Studies	
2. 1.0 credit in: Core Politics, Society, and International Affairs	1.0
EURR 2001 [0.5] Current Issues in European Politics and Society	

EURR 2002 [0.5] Europe and Russia in the World	
3. 1.0 credit in: Core Literature and Culture	1.0
EURR 3001 [0.5] Literature and Culture in Europe	
EURR 3002 [0.5] Literature and Culture in Russia and Eurasia	
4. 1.0 credit from: Modern History category	1.0
5. 1.5 credits from: Politics and Economics category. Must include credits in both PSCI and ECON	1.5
6. 0.5 credit from: Language, Art, Culture category	0.5
7. 0.5 credit from: Contexts and Methods for Regional Studies category	0.5
8. 2.0 credits from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 1.0 credit from the Contexts and Methods for Regional Studies category.	2.0
9. 2.0 credits from: EURUS 4000-level Honours category. At least 1.0 credit in EURR. May include EURR 4908 (1.0) Honours Essay	2.0
B. Credits Not Included in the Major CGPA (10.0 credits):	
10. 1.0 credit from:	1.0
ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1] Introduction to Economics	
11. 9.0 credits in free electives.	9.0
C. Additional Requirements	
12. The EURUS Language Requirement must be met.	
Total Credits	20.0

Notes:

1. See "Approved Courses in European, Russian, and Eurasian Studies" section of the calendar for a list of approved courses that fulfill specific categories in the requirements above.
2. With the permission of the Institute, students who transfer or enter the program after first year may substitute a course from Approved Courses in European, Russian, and Eurasian Studies for EURR 1001.

European and Russian Studies

B.A. Combined Honours (20.0 credits)

A. Credits Included in the EURUS Major CGPA (7.0 credits)

1. 0.5 credit in: Foundations	0.5
EURR 1001 [0.5] Introduction to European and Russian Studies	
2. 1.0 credit in: Core Politics, Society, and International Affairs	1.0
EURR 2001 [0.5] Current Issues in European Politics and Society	
EURR 2002 [0.5] Europe and Russia in the World	
3. 1.0 credit in: Core Literature and Culture	1.0
EURR 3001 [0.5] Literature and Culture in Europe	
EURR 3002 [0.5] Literature and Culture in Russia and Eurasia	
4. 1.0 credit from: Modern History category	1.0
5. 1.0 credit from: Politics and Economics category. Must include credits in both PSCI and ECON	1.0
6. 0.5 credit from: Language, Art, Culture category	0.5

7. 1.0 credit from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 0.5 credit from the Contexts and Methods for Regional Studies category. 1.0

8. 1.0 credit from: EURUS 4000-level Honours category. At least 0.5 credit in EURR. May include EURR 4908 (1.0) Honours Essay. 1.0

B. Credits Not Included in the Major CGPA (13.0 credits) 13.0

9. 1.0 credit from:
 ECON 1001 [0.5] Introduction to Microeconomics & ECON 1002 [0.5] Introduction to Macroeconomics or FYSM 1003 [1.0] Introduction to Economics

10. The requirements from the other discipline must be satisfied

11. Sufficient free electives to make 20.0 credits for the degree.

C. Additional Requirements

12. The EURUS Language Requirement must be met.

Total Credits 20.0

Notes:

- At most, one Honours essay course from either department may be counted toward this Combined program.
- Combined Honours in European and Russian Studies and Journalism is available only to students already admitted to the Bachelor of Journalism degree.
- With the permission of the Institute, students who enter the program after first year may substitute a course from the list of Approved Courses in European, Russian, and Eurasian Studies for EURR 1001.

European and Russian Studies

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 0.5 credit in: Foundations 0.5
 EURR 1001 [0.5] Introduction to European and Russian Studies

2. 1.0 credit in: Core Politics, Society, and International Affairs 1.0
 EURR 2001 [0.5] Current Issues in European Politics and Society
 EURR 2002 [0.5] Europe and Russia in the World

3. 1.0 credit in: Core Literature and Culture 1.0
 EURR 3001 [0.5] Literature and Culture in Europe
 EURR 3002 [0.5] Literature and Culture in Russia and Eurasia

4. 1.0 credit from: Modern History category 1.0

5. 1.0 credit from: Politics and Economics category 1.0

6. 2.5 credits from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 1.0 credit from the Contexts and Methods for Regional Studies category. 2.5

B. Credits Not Included in the Major CGPA (8.0 credits)

7. 8.0 credits in free electives 8.0

C. Additional Requirements

8. The EURUS language requirement must be met.

Total Credits 15.0

Notes:

- See "Approved Courses in European, Russian, and Eurasian Studies" section of the calendar for a list of approved courses that fulfill specific categories in the requirements above.
- With the permission of the Institute, students who enter the program after first year may substitute a course from the list of Approved Courses in European, Russian, and Eurasian Studies for EURR 1001.

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Europe and Russia in the World B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5
 GINS 1000 [0.5] Global History
 GINS 1010 [0.5] International Law and Politics
 GINS 1020 [0.5] Ethnography, Globalization and Culture
 GINS 2000 [0.5] Ethics and Globalization
 GINS 2010 [0.5] Globalization and International Economic Issues
 GINS 2020 [0.5] Global Literatures
 GINS 3010 [0.5] Global and International Theory
 GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change
 GINS 4090 [0.5] Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation
 GINS 1300 [0.0] International Experience Requirement Preparation

3. 7.5 credits in: the Specialization 7.5

a. 0.5 credit in: Foundations
 EURR 1001 [0.5] Introduction to European and Russian Studies

b. 1.0 credit in: Core Politics, Society, and International Affairs
 EURR 2001 [0.5] Current Issues in European Politics and Society
 EURR 2002 [0.5] Europe and Russia in the World

c. 1.0 credit in: Core Literature and Culture
 EURR 3001 [0.5] Literature and Culture in Europe
 EURR 3002 [0.5] Literature and Culture in Russia and Eurasia

d. 1.0 credit from: Modern History category

e. 1.0 credit from: Politics and Economics category

f. 0.5 credit from: Language, Art, Culture category

g. 1.0 credit from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 0.5 credit from the Contexts and Methods for Regional Studies category.

h. 1.5 credit from: EURUS 4000-level Honours Course category. At least 1.0 credit in EURR. May include EURR 4908 (1.0) Honours Essay.

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.
6. The BGINs Language requirement must be met with a regional language relevant to Europe and Russia other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

Total Credits 20.0

Stream in Europe and Russia in the World B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. 0.5 credit in: Foundations

EURR 1001 [0.5]	Introduction to European and Russian Studies
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b. 1.0 credit in: Core Politics, Society, and International Affairs

EURR 2001 [0.5]	Current Issues in European Politics and Society
EURR 2002 [0.5]	Europe and Russia in the World

c. 2.5 credits from: Approved Courses in European, Russian, and Eurasian Studies. May include:

EURR 3001 [0.5]	Literature and Culture in Europe
EURR 3002 [0.5]	Literature and Culture in Russia and Eurasia

B. Credits Not Included in the Major CGPA (7.0 credits):

3. 7.0 credits in: Free Electives 7.0

C. Additional Requirements

4. The BGINs Language requirement must be met in a regional language relevant to Europe and Russia other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

Total Credits 15.0

Minor in European and Russian Studies (4.0 credits)

Open to all undergraduate degree students not in EURUS programs or the B.G.In.S. Specialization or Stream in Europe and Russia in the World.

Requirements:

1. 1.0 credit from: EURUS Foundation and Literature and Culture 1.0

EURR 1001 [0.5]	Introduction to European and Russian Studies
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EURR 3001 [0.5]	Literature and Culture in Europe
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EURR 3002 [0.5]	Literature and Culture in Russia and Eurasia
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2. 1.0 credit in: EURUS Core Politics and International Affairs 1.0

EURR 2001 [0.5]	Current Issues in European Politics and Society
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EURR 2002 [0.5]	Europe and Russia in the World
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3. 0.5 credit from: Modern History category 0.5

4. 0.5 credit from: Politics and Economics category 0.5

5. 1.0 credit from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR courses not used to fulfill another requirement. 1.0

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Note: See the "Approved Courses in European, Russian, and Eurasian Studies" section of the calendar for a list of courses that fulfill specific categories indicated in the requirements above.

Approved Courses in European, Russian, and Eurasian Studies

This list includes categories of approved courses that fulfill specific program requirements for all undergraduate programs in the Institute of European, Russian, and Eurasian Studies (EURUS). Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Modern History

HIST 2207 [1.0]	Nineteenth-Century Europe
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HIST 2502 [0.5]	Modern Britain
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HIST 2508 [0.5]	War, Politics, and Society in Twentieth-Century Global France
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HIST 2510 [0.5]	19th-Century Germany
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HIST 2511 [0.5]	20th-Century Germany
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HIST 2600 [1.0]	History of Russia
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HIST 2802 [0.5]	War and Society in Modern Europe, 1789-1914
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HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950
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HIST 3113 [0.5]	Revolution and Society in France, 1789-1799
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HIST 3115 [0.5]	Childhood and Youth in History
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HIST 3217 [0.5]	Empire and Globalization
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HIST 3604 [0.5]	Gender and Sexuality in Modern Europe
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HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions
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HIST 3800 [0.5]	International History 1914-41
HIST 3801 [0.5]	International History 1941-90
HIST 3902 [0.5]	Topics in European History

Politics and Economics

ECON 3807 [0.5]	European Economic Integration
ECON 3808 [0.5]	The Economics of Transition
PSCI 3105 [0.5]	Imperialism
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3608 [0.5]	Migration Governance

Language, Art, Culture

GERM, ITAL, PORT, RUSS, SPAN or other approved course in a regional language at the 3000- or 4000-level or courses from the list below:

ARTH 1100 [0.0]	Art and Society: Prehistory to the Renaissance
ARTH 1101 [0.0]	Art and Society: Renaissance to the Present
ARTH 2202 [0.5]	Medieval Architecture and Art
ARTH 2300 [0.5]	Italian Renaissance Art
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]
ARTH 2404 [0.5]	Art of the 17th and 18th Centuries
ARTH 2502 [0.5]	Art of the 19th Century
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries
ARTH 3710 [0.5]	Architecture and Empire
FILM 2606 [0.5]	History of World Cinema I
FILM 2607 [0.5]	History of World Cinema II
FREN 2100 [1.0]	French 4
FREN 2110 [1.0]	French 4: Writing
FREN 2202 [0.5]	Introduction aux études littéraires 1
FREN 3212 [0.5]	Des manuscrits aux belles-lettres : de la littérature médiévale à l'humanisme
FREN 3213 [0.5]	Du Baroque aux Lumières
FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature
HIST 3005 [0.5]	Medieval Aristocratic Life
HIST 3006 [0.5]	Medieval Religious Life
HIST 3007 [0.5]	Medieval Intellectual Life
HIST 3105 [0.5]	Renaissance Europe
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 2102 [0.5]	Music in an Age of Spectacle, Commerce, and Colonization
MUSI 2103 [0.5]	Music in an Age of Order, Invention, and Revolution
MUSI 3400 [0.5]	A History of Opera before 1800
MUSI 3401 [0.5]	A History of Opera from 1800 to 1945
PHIL 1610 [0.5]	Great Philosophical Ideas, Part 1

PHIL 1620 [0.5]	Great Philosophical Ideas, Part 2
PHIL 2005 [1.0]	Ancient Philosophy: The Search for Wisdom
PHIL 2101 [0.5]	History of Ethics
PHIL 2103 [0.5]	Philosophy of Human Rights
PHIL 2202 [0.5]	Topics in Marxist Philosophy
PHIL 3002 [0.5]	17th Century Philosophy
PHIL 3003 [0.5]	18th Century Philosophy
PHIL 3005 [0.5]	19th Century Philosophy
PHIL 3009 [0.5]	Topics in European Philosophy
PHIL 3330 [0.5]	Topics in History of Social and Political Philosophy
PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy
PSCI 2301 [0.5]	History of Political Thought I
PSCI 2302 [0.5]	History of Political Thought II
PSCI 3308 [0.5]	Modern Political Thought
PSCI 3312 [0.5]	Enlightenment Political Thought
RELI 1710 [0.5]	Judaism, Christianity, Islam
RELI 2110 [0.5]	Judaism
RELI 2121 [0.5]	Hebrew Bible
RELI 2230 [0.5]	Global Christianity
RELI 2310 [0.5]	Islam

Context and Methods for Regional Studies

COMS 2700 [0.5]	Global Media and Communication
COMS 3109 [0.5]	Communication, Culture and Identity
ECON 3600 [0.5]	Introduction to International Economics
ECON 3601 [0.5]	Introduction to International Trade
ECON 3602 [0.5]	International Monetary Problems
ECON 3870 [0.5]	Comparative Economic Systems
FYSM 1603 [1.0]	Full-Year Seminar in European and Russian Studies
FYSM 1614 [0.5]	One-Term Seminar in European and Russian Studies
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3404 [0.5]	Geographies of Economic Development
GINS 3930 [0.5]	Carleton International Placement
GINS 3931 [1.0]	Carleton International Placement
HIST 1001 [1.0]	The Making of Europe
HIST 1002 [1.0]	Europe in the 20th Century
HIST 2811 [0.5]	Public History from Memory to Museums
HIST 3809 [0.5]	Historical Representations
HIST 3810 [0.5]	Historical Theory
HIST 3812 [0.5]	Digital History
HIST 3813 [0.5]	Problems in Global and Transnational Histories
IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis

IPAF 4900 [0.5]	Research Experience Course
LAWS 2105 [0.5]	Social Justice and Human Rights
LAWS 2601 [0.5]	Public International Law
LAWS 3602 [0.5]	International Human Rights
LAWS 3604 [0.5]	International Organizations
LAWS 3207 [0.5]	International Transactions
MGDS 2000 [0.5]	Global Migration and Transnationalism
PSCI 1200 [0.5]	Politics in the World
PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2500 [0.5]	Gender and Politics
PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
PSCI 3107 [0.5]	The Causes of War
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3309 [0.5]	Modern Ideologies
PSCI 3600 [0.5]	International Institutions
PSCI 3703 [0.5]	Governing in the Global Economy
SOCI 2000 [0.5]	Foundations of Sociological Inquiry
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods
SOCI 2005 [1.0]	Histories of Sociological Thought
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 2045 [0.5]	Gender and Society
SOCI 2160 [0.5]	War and Society
SOCI 2702 [0.5]	Power and Social Change
WGST 2800 [0.5]	Intersectional Identities
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 3803 [0.5]	Feminisms and Transnationalism
EURUS 4000-level Honours Courses	
EURR 4002 [0.5]	Post-Soviet States and Societies
EURR 4003 [0.5]	Social and Political Perspectives in Europe
EURR 4008 [0.5]	Nationalism in Russia and Eurasia
EURR 4100 [0.5]	Nation-Building in Central and Eastern Europe
EURR 4101 [0.5]	The Balkans in Transition – 1918 to 1989
EURR 4102 [0.5]	The Balkans since 1989
EURR 4103 [0.5]	The Great Russian Novel
EURR 4104 [0.5]	European Integration and European Security
EURR 4106 [0.5]	Selected Topics in European Integration Studies
EURR 4107 [0.5]	Russia's Regional and Global Ambitions
EURR 4201 [0.5]	Special Topics in European Studies
EURR 4202 [0.5]	Special Topics in Russian and Eurasian Studies
EURR 4204 [0.5]	Central Europe, Past and Present

EURR 4205 [0.5]	Politics of Identity in Europe and the Russian Area
EURR 4206 [0.5]	Internship and Applied Policy Skills
EURR 4207 [0.5]	Politics of Central Eurasia
EURR 4208 [0.5]	Foreign Policies of Soviet Successor States
EURR 4209 [0.5]	Politics of the Caucasus and Caspian Basin
EURR 4302 [0.5]	EU Summer Study Abroad
EURR 4303 [0.5]	Contemporary Europe: From Postwar to the European Union
EURR 4304 [0.5]	Europe and International Migration
EURR 4305 [0.5]	Imperial Russia and the Russian Revolution
EURR 4306 [0.5]	The Soviet Union: Power and Culture
EURR 4704 [0.5]	The Business Environment in Europe
EURR 4908 [1.0]	Honours Essay
HIST 4100 [1.0]	Seminar in Early Modern European History
HIST 4200 [1.0]	Seminar in European History
HIST 4201 [0.5]	Modern European History
HIST 4600 [1.0]	Seminar in Russian History
PSCI 4103 [0.5]	The Modern State
PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4610 [0.5]	Politics of Migration Management

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EARR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political

Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two

terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a

student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to

accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours European and Russian Studies: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours European and Russian Studies program
2. Obtained and maintained an overall CGPA of 8.0 or higher and a major CGPA of 9.0 or higher
3. Have successfully completed by the start-date of the first work term, the required first-year courses, second-year courses ; have completed PSCI 3206, PSCI 3207, PSCI 3208, and PSCI 3209, before the second work term; and ECON 3807 or ECON 3808 before the third work term

Students in B.A. Honours European and Russian Studies must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: EURR 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	O		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required

for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

European and Russian Studies (EURR) Courses

EURR 1001 [0.5 credit]

Introduction to European and Russian Studies

An introduction to the study of Europe and Russia, including aspects of the histories, societies, cultures, and politics of the region.

Includes: Experiential Learning Activity

Lectures/groups three hours a week.

EURR 2001 [0.5 credit]

Current Issues in European Politics and Society

An interdisciplinary examination of social, political, and economic issues facing Europe, including the countries of the European Union, Eastern Europe, and Russia.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

EURR 2002 [0.5 credit]

Europe and Russia in the World

The position of Europe, the European Union, and the Russian Federation in a global context, including geopolitical, economic, security, and human dimensions.

Prerequisite(s): second year standing.

Lecture and discussion three hours a week.

EURR 3001 [0.5 credit]**Literature and Culture in Europe**

A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society.

Also listed as ENGL 3804.

Precludes additional credit for EURR 2000 or ENGL 2010.

Prerequisite(s): second year standing.

Lecture and discussion three hours a week.

EURR 3002 [0.5 credit]**Literature and Culture in Russia and Eurasia**

A survey of the literature and cultural texts that have defined Russian and neighboring Slavic countries.

Examination of fiction and non-fiction texts that have contributed to and reflected the development of Russian and Slavic culture and society.

Also listed as ENGL 3805.

Precludes additional credit for EURR 2000 and ENGL 2010.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

EURR 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A. European and Russian Studies (Honours) Co-operative option, completion of the Co-op preparation classes offered by the Co-op Office and permission of the Institute.

EURR 4002 [0.5 credit]**Post-Soviet States and Societies**

The relationship between social forces and state structures at both the national and local levels in the USSR and the post-Soviet states.

Also listed as PSCI 4502.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5002, PSCI 5110, for which additional credit is precluded.

Seminar three hours a week.

EURR 4003 [0.5 credit]**Social and Political Perspectives in Europe**

Social issues and policies in the European Union including European identity, democratic legitimacy, nationalist and extremist political movements, Euroscepticism, migration and immigration, social inclusion/exclusion and social models, gender and family policy, regional differentiation.

Precludes additional credit for EURR 4000.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5003, for which additional credit is precluded.

Seminar three hours a week.

EURR 4008 [0.5 credit]**Nationalism in Russia and Eurasia**

Ethnic basis of nationalism in the region. Ethnic politics and trends.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5008, for which additional credit is precluded.

Seminar three hours a week.

EURR 4100 [0.5 credit]**Nation-Building in Central and Eastern Europe**

Processes of nation building in the region examined in terms of a particular country, or set of countries.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5100, for which additional credit is precluded.

Seminar three hours a week.

EURR 4101 [0.5 credit]**The Balkans in Transition – 1918 to 1989**

The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes.

Also listed as HIST 4605.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4102 [0.5 credit]**The Balkans since 1989**

Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region.

Also listed as PSCI 4507.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4103 [0.5 credit]**The Great Russian Novel**

A study of masterpieces of prose fiction from the Golden Age of Russian literature. Readings will be chosen from writers such as Turgenev, Tolstoy, Dostoevsky, Gogol, and/or others. All texts will be studied in English translation.

Also listed as ENGL 4600.

Prerequisite(s): Third-year standing.

Lecture three hours a week.

EURR 4104 [0.5 credit]**European Integration and European Security**

Issues related to the formation of supra-national decision-making structures in Europe.

Includes: Experiential Learning Activity

Also listed as PSCI 4608.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5104, for which additional credit is precluded.

Seminar three hours a week.

EURR 4106 [0.5 credit]**Selected Topics in European Integration Studies**

Selected topics related to European integration in the post-World War II period.

Also listed as PSCI 4609.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4107 [0.5 credit]**Russia's Regional and Global Ambitions**

Domestic conditions in Russia from 2000 to the present and the framing of Russia's foreign policy and strategic objectives towards the former Soviet republics and other key global actors, including the United States, the European Union, NATO and China.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5107, for which additional credit is precluded.

Seminar three hours a week.

EURR 4201 [0.5 credit]**Special Topics in European Studies**

A seminar focusing on selected topics related to Europe.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4202 [0.5 credit]**Special Topics in Russian and Eurasian Studies**

A seminar focusing on selected topics related to Russia and neighbouring countries.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5202, for which additional credit is precluded.

Seminar three hours a week.

EURR 4204 [0.5 credit]**Central Europe, Past and Present**

Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood, with emphasis on national accommodations and conflicts.

Also listed as HIST 4604.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5204, for which additional credit is precluded.

Seminar three hours a week.

EURR 4205 [0.5 credit]**Politics of Identity in Europe and the Russian Area**

The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.

Includes: Experiential Learning Activity

Also listed as PSCI 4501.

Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.

Seminar three hours a week.

EURR 4206 [0.5 credit]**Internship and Applied Policy Skills**

A seminar accompanying an unpaid internship placement to develop workplace and applied policy skills. Relating applied experience to academic literature. Writing skills for an applied policy setting. Internship placement: 12 days over 12 weeks.

Includes: Experiential Learning Activity

Prerequisite(s): open only to fourth-year EURUS B.A.

Honours students with a minimum B+ average and placement in an internship position in the same semester or in the previous semester (based on a competitive application process).

Also offered at the graduate level, with different requirements, as EURR 5301, for which additional credit is precluded.

Seminar: six three-hour seminar sessions.

EURR 4207 [0.5 credit]**Politics of Central Eurasia**

Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.

Includes: Experiential Learning Activity

Also listed as PSCI 4503.

Prerequisite(s): fourth year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4208 [0.5 credit]**Foreign Policies of Soviet Successor States**

The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.

Also listed as PSCI 4601.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4209 [0.5 credit]**Politics of the Caucasus and Caspian Basin**

Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.

Includes: Experiential Learning Activity

Also listed as PSCI 4504.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4302 [0.5 credit]**EU Summer Study Abroad**

This course is open only to students in approved summer study options in Europe, particularly the EU Study Tour.

Includes: Experiential Learning Activity

Prerequisite(s): approval of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5302, for which additional credit is precluded.

EURR 4303 [0.5 credit]**Contemporary Europe: From Postwar to the European Union**

History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions.

Includes: Experiential Learning Activity

Also listed as HIST 4606.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5303, for which additional credit is precluded.

Seminar three hours a week.

EURR 4304 [0.5 credit]**Europe and International Migration**

Europe's role in international migration. Topics to be discussed may include migration and mobility as both assets and challenges for sending, transit, and destination countries, changing geographies of migration, inclusion and exclusion, political mobilization, and responses of European states and other actors.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5304, for which additional credit is precluded.

Seminar three hours a week.

EURR 4305 [0.5 credit]**Imperial Russia and the Russian Revolution**

Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life.

Includes: Experiential Learning Activity

Also listed as HIST 4607.

Precludes additional credit for EURR 4203.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5305, for which additional credit is precluded.

Seminar three hours a week.

EURR 4306 [0.5 credit]**The Soviet Union: Power and Culture**

Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR's citizens.

Includes: Experiential Learning Activity

Also listed as HIST 4608.

Precludes additional credit for EURR 4203.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5306, for which additional credit is precluded.

Seminar three hours a week.

EURR 4704 [0.5 credit]**The Business Environment in Europe**

The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture.

Also listed as BUSI 4704.

Precludes additional credit for EURR 4006 (no longer offered), BUSI 4604 (no longer offered).

Prerequisite(s): third-year standing.

Seminar three hours a week.

EURR 4900 [1.0 credit]**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite(s): permission of the Institute.

EURR 4901 [0.5 credit]**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite(s): permission of the Institute.

EURR 4902 [0.5 credit]**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite(s): permission of the Institute.

EURR 4908 [1.0 credit]**Honours Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by the supervisor and a second reader. Students should consult with the Supervisor of Undergraduate Studies regarding the topic and supervisor. Institute's Honours Essay guidelines apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, a CGPA of 9.00 or higher in courses qualifying for credit in European and Russian Studies, and permission of the Institute.

Film Studies

This section presents the requirements for programs in:

- Film Studies B.A. Honours
- Film Studies B.A. Combined Honours
- Film Studies B.A.
- Minor in Film Studies
- Post-Baccalaureate Diploma in Film Studies

Program Requirements

Film Studies

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 0.5 credits in:	0.5
FILM 1101 [0.5] Introduction to Film Studies or FILM 1120 [0.5] Seminar in Film Studies	
2. 2.0 credits in:	2.0
FILM 2001 [0.5] Film Theory and Analysis I	
FILM 2002 [0.5] Film Theory and Analysis II	
FILM 2606 [0.5] History of World Cinema I	
FILM 2607 [0.5] History of World Cinema II	
3. 2.5 credits in FILM at the 2000-level or higher	2.5
4. 2.0 credits in FILM at the 3000-level	2.0
5. 0.5 credit in:	0.5
FILM 4001 [0.5] Research and Critical Methodologies	
6. 1.5 credits in FILM at the 4000-level	1.5
B. Credits Not Included in the Major CGPA (11.0 credits)	
7. 8.0 credits in electives not in FILM	8.0
8. 3.0 credits in free electives.	3.0
Total Credits	20.0

Film Studies

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Film Studies Major CGPA (7.0 credits)

1. 0.5 credits in:	0.5
FILM 1101 [0.5] Introduction to Film Studies or FILM 1120 [0.5] Seminar in Film Studies	
2. 2.0 credits in:	2.0
FILM 2001 [0.5] Film Theory and Analysis I	
FILM 2002 [0.5] Film Theory and Analysis II	
FILM 2606 [0.5] History of World Cinema I	
FILM 2607 [0.5] History of World Cinema II	
3. 2.0 credits in FILM at the 2000-level or higher	2.0
4. 1.5 credit in FILM at the 3000-level	1.5
5. 1.0 credit in FILM at the 4000-level	1.0
B. Credits Not Included in the Film Studies Major CGPA (13.0 credits)	
6. The requirements of the other discipline must be satisfied	
7. Sufficient free electives to total 20.0 credits for the program.	
Total Credits	20.0

Film Studies

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 0.5 credits in:	0.5
FILM 1101 [0.5] Introduction to Film Studies or FILM 1120 [0.5] Seminar in Film Studies	
2. 1.5 credits in:	1.5
FILM 2001 [0.5] Film Theory and Analysis I	
FILM 2606 [0.5] History of World Cinema I	
FILM 2607 [0.5] History of World Cinema II	

3. 2.0 credits in FILM at the 2000-level or higher	2.0
4. 2.0 credits in FILM at the 3000-level	2.0
B. Credits Not Included in the Major CGPA (9.0 credits)	
5. 6.0 credits in electives not in FILM	6.0
6. 3.0 credits in free electives.	3.0
Total Credits	15.0

Minor in Film Studies (4.0 credits)

Open to all undergraduate degree students not in Film Studies programs.

Requirements

1. 0.5 credit from:	0.5
FILM 1101 [0.5] Introduction to Film Studies or FILM 1120 [0.5] Seminar in Film Studies	
2. 0.5 credit from:	0.5
FILM 2001 [0.5] Film Theory and Analysis I	
FILM 2606 [0.5] History of World Cinema I	
FILM 2607 [0.5] History of World Cinema II	
3. 2.0 credits in FILM at the 2000-level or higher	2.0
4. 1.0 credit in FILM at the 3000-level	1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Post-Baccalaureate Diploma in Film Studies (4.0 credits)

Admission to this program requires the permission of the Film Studies program. Normally, students would be required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Requirements:

1. 2.0 credits in:	2.0
FILM 2001 [0.5] Film Theory and Analysis I	
FILM 2002 [0.5] Film Theory and Analysis II	
FILM 2606 [0.5] History of World Cinema I	
FILM 2607 [0.5] History of World Cinema II	
2. 1.0 credit in Film Studies electives at the 3000-level	1.0
3. 1.0 credit in Film Studies electives at the 4000-level	1.0
Total Credits	4.0

With the approval of the Film Studies undergraduate supervisor, 0.5 credit may be taken outside the department.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-

year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information

Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility

for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Film Studies (FILM) Courses

FILM 1101 [0.5 credit]

Introduction to Film Studies

Introduction to the study of film that emphasizes problems and methods of film analysis through the study of various types of films. Topics relating to the filmmaker, film genre, and film history are covered through a focus on questions of style and technique.

Precludes additional credit for FILM 1120, FILM 1000 (no longer offered), and FYSM 1510.

Lecture and screening three hours a week, discussion one hour a week.

FILM 1120 [0.5 credit]

Seminar in Film Studies

A seminar in the study of film that emphasizes problems and methods of film analysis through the study of a variety of types of films.

Precludes additional credit for FILM 1101, FILM 1000 (no longer offered) and FYSM 1510.

Prerequisite(s): enrolment in a Film Studies major.

Lecture and screening three hours a week, discussion one hour a week.

FILM 2001 [0.5 credit]

Film Theory and Analysis I

Introduction to major film theories and analytical practices. The objective of this course is to familiarize students with the main theories and methods of analysis that have been developed for the study of film.

Precludes additional credit for FILM 2000 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120 and second-year standing; or permission of the Discipline.

Lecture and screening three hours a week, seminar one hour a week.

FILM 2002 [0.5 credit]

Film Theory and Analysis II

Building on the skills acquired in FILM 2001, this course considers specific debates in film theory, and provides students with advanced methods for film analysis.

Precludes additional credit for FILM 2000 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120, and FILM 2001, and second-year standing; or permission of the Discipline.

Lecture and screening three hours a week, seminar one hour a week.

FILM 2101 [0.5 credit]

The Film Industry

The organization of the production, distribution and exhibition practices of various film industries. May include an examination of the relationship between a national film industry and its television industry.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2106 [0.5 credit]

The Documentary

An examination of the work of individual filmmakers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered.

Also listed as JOUR 2106.

Precludes additional credit for FILM 2105 (no longer offered), JOUR 2105 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2201 [0.5 credit]

National Cinema

This course examines the film production of specific countries in order to determine the themes, the styles, and the character of a national cinema.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2202 [0.5 credit]

Japanese Cinema

Various practices and movements in the history of Japanese cinema, ranging from the silent era to the current digital age.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2203 [0.5 credit]**Scandinavian Cinema**

The development of cinema culture and film production in the Scandinavian countries, from the golden age of Scandinavian silent cinema to contemporary Nordic noir. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2204 [0.5 credit]**Indigenous Cinema and Media**

A critical examination of films and other audiovisual media created by Indigenous artists, such as independent films, genre films, documentaries, web series, installations, and video games. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Department. Lecture and screening three hours a week, lecture one hour a week.

FILM 2206 [0.5 credit]**Canadian Cinema**

A critical examination of Canadian cinema and media and how it relates to other aspects of Canadian culture. Precludes additional credit for FILM 2207 (no longer offered), FILM 2208 (no longer offered), FILM 2209 (no longer offered). Prerequisite(s): FILM 1101 or FILM 1120 or second-year standing; or permission of the Discipline. Lecture and screening three hours a week, seminar one hour a week.

FILM 2401 [0.5 credit]**Authorship in Film and Media**

A detailed study of the themes, the characteristic style, development and influence of one or more directors. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2601 [0.5 credit]**Film Genres**

This course examines questions of generic form, drawing examples from world cinema. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2606 [0.5 credit]**History of World Cinema I**

Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations. Also listed as ENGL 2600. Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered). Prerequisite(s): FILM 1101 or FILM 1120, and second-year standing, or permission of the discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2607 [0.5 credit]**History of World Cinema II**

Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations. Also listed as ENGL 2601. Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered). Prerequisite(s): FILM 2606 or ENGL 2600 or permission of the discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 2801 [0.5 credit]**Film and Media Practice I**

Introduction to the basic principles of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques. This course is intended for Film Studies majors only. Includes: Experiential Learning Activity Prerequisite(s): FILM 1101 or FILM 1120. Lecture/workshops four hours a week.

FILM 2809 [0.5 credit]**The Video Game**

Introduction to the video game as a popular media form, an emerging aesthetic, and a social and cultural practice. Topics include: history of video games; game form; game industry; narrative; art and design; interactivity; theories of play. Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3105 [0.5 credit]**Questions of Documentary Practice**

Theoretical implications of documentary film and documentary television practice. Also listed as JOUR 3105. Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline. Lecture and screening three hours a week, lecture one hour a week.

FILM 3206 [0.5 credit]**Topics in American Cinema**

Studies in various aspects of American cinema with emphasis on historical and critical issues.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3209 [0.5 credit]**Topics in Canadian Cinema**

Studies in various aspects of Canadian cinema. Topics may vary from year to year.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3301 [0.5 credit]**Topics in Cinema, Gender, and Sexuality**

A study of selected topics in gender and cinema with emphasis on critical and historical questions.

Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3402 [0.5 credit]**Film Music**

The use of music in film, from the silent era to the present day. Techniques, styles and theory of film music through the examination of selected scenes.

Also listed as MUSI 3402.

Lectures three hours a week, screening two hours a week.

FILM 3506 [0.5 credit]**Topics in Film Theory**

Building on the skills acquired in FILM 2000, this course provides a critical study of advanced film theories. Topics may include aesthetics, ideological criticism, film and philosophy, and theories of technology and historiography. Precludes additional credit for FILM 3505 (no longer offered).

Prerequisite(s): FILM 2001 and FILM 2002 and third-year standing; or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3601 [0.5 credit]**Contemporary Québec Cinema**

Critical reflection on notable filmmakers, formal and thematic trends, dominant social and political issues, and diverse cultural perspectives in Québec cinema during the 21st century, including the film movement known as the Québec New Wave (Renouveau du cinéma québécois). French language ability not required.

Prerequisite(s): 1.0 credit in FILM and third-year standing or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3608 [0.5 credit]**Topics in Film History**

Studies of aspects of the history of world cinema.

Topics will vary from year to year and may include the examination of film movements, styles and genres, and/or comparative study of national, regional and/or world-wide trends.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3609 [0.5 credit]**African Cinema**

Major figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the diasporic, the continental, race, Afro-futurism, and world cinema, interrogating in the process the very category of "African cinema".

Also listed as AFRI 3609.

Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3701 [0.5 credit]**Topics in Animation, Video, and Experimental Film**

A study of selected topics in animation, video or experimental film.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3800 [0.5 credit]**Film/Video Archival or Curatorial Practice**

Consideration of topics in film/video archival or curatorial practice, including questions related to cultural policy, exhibition, conservation, and interrelationship of media. Students are expected to bear all travel and other costs arising from required visits to local facilities.

Includes: Experiential Learning Activity

Precludes additional credit for FILM 4800 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3801 [0.5 credit]**Film and Media Practice II**

Practical and conceptual approaches to film studies from the point of view of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques.

Includes: Experiential Learning Activity

Prerequisite(s): FILM 2001 and FILM 2801.

Lecture/workshops four hours a week.

FILM 3808 [0.5 credit]**Cinema and Technology**

The technological development of cinema. Topics may include advances in sound and colour processes, digital effects, exhibition technologies and new media.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3809 [0.5 credit]**Analyzing Digital Media**

History, aesthetics, and theories of digital media and culture. Key concepts in digital media studies, including: digital cinema, interactive documentaries, viral videos, web series, emerging immersive platforms.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3810 [0.5 credit]**Sound in Film and Media**

Questions related to sound in film and media such as: how is sound used to create narratives and emotions? How does sound affect our experience of actual and fictional worlds?

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3901 [0.5 credit]**Topics in Film Studies**

Selected topics and issues not ordinarily treated in the third-year course program.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3902 [0.5 credit]**Screenwriting Workshop**

An intermediate workshop involving regular assignments in writing for film.

Includes: Experiential Learning Activity

Also listed as ENGL 3902.

Prerequisite(s): a 2000-level creative writing workshop or permission of the instructor. Permission to register in this course requires the student to submit a portfolio.

Instructions can be found at Carleton.ca/English.

Workshop three hours a week.

FILM 4001 [0.5 credit]**Research and Critical Methodologies**

Study of various methodologies for critical, theoretical and historical research in film studies.

Precludes additional credit for FILM 4000 (no longer offered).

Prerequisite(s): FILM 2002, 1.0 credit in FILM at the 3000-level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture two hours a week.

FILM 4002 [0.5 credit]**Topics in Moving Image Culture**

Selected aspects of the audio-visual cultures of the late nineteenth and twentieth centuries.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Seminar three hours a week.

FILM 4201 [0.5 credit]**Selected Topics in National Cinemas**

A study of a selected topic in national cinema.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4203 [0.5 credit]**Film Festivals and World Cinema**

Theoretical and critical study of the film festival as a phenomenon shaping our understanding of film culture, institutions, history and forms. Issues examined may include festivals as sites of cultural legitimation; as spectacle; their political economy; curation/programming; case studies of film festivals around the world.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4301 [0.5 credit]**Topics in Film and Philosophy**

Selected topics in philosophical approaches to the study of film, and an examination of the relations between film theory and philosophical aesthetics.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Also offered at the graduate level, with different requirements, as FILM 5109, for which additional credit is precluded.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4401 [0.5 credit]**Selected Topics in Film Authorship**

A study of questions of authorship in the cinema, concentrating on one or more filmmakers.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4501 [0.5 credit]**Selected Topics in Film Theory**

A study of a selected topic in film theory.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4805 [0.5 credit]**Practicum in Film and Film Studies**

Practical experience through working on specific projects under the supervision of staff at a museum, gallery, archive, or production company in the Ottawa area. A maximum of 0.5 credit Film Studies practica courses may be offered in fulfilment of Film Studies requirements. Graded SAT/UNS.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Film Studies, a CGPA of 9.00 or higher in Film Studies, and permission of the Discipline.

FILM 4901 [0.5 credit]**Special Topic**

Selected topics in film studies not ordinarily available in the regular course program. The choice of topic or topics will vary at least every two years and will be announced well in advance of the registration period.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Screening three hours a week, seminar two hours a week.

FILM 4904 [0.5 credit]**Independent Study**

For students who wish to study a specific topic. Proposed projects must be approved by the Program Committee. Written request outlining the project must be submitted by the first day of the term. An essay is the usual assignment. Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Film Studies and a CGPA of 10.00 or higher in Film Studies. Unscheduled.

Food Science

This section presents the requirements for programs in:

- Food Science B.Sc. Honours
- Minor in Food Science

Food Science**B.Sc. Honours (20.0 credits)****A. Credits Included in the Major CGPA (9.5 credits)**

1. 6.0 credits in:		6.0
FOOD 1001 [0.5]	Introduction to Food Science	
FOOD 2001 [0.5]	Principles of Nutrition	
FOOD 2002 [0.5]	Food Processing	
FOOD 2003 [0.5]	Regulation of the Canadian Food Industry	
FOOD 2004 [0.5]	Scientific Communication in Food Science	
FOOD 3001 [0.5]	Food Chemistry	
FOOD 3002 [0.5]	Food Analysis	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4001 [0.5]	Food Quality Control	
FOOD 4102 [0.5]	Current Issues in Canadian Food Governance, Regulation and Policy	
FOOD 4103 [0.5]	Food Safety Risk Assessment	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
2. 1.0 credits from:		1.0
FOOD 3003 [0.5]	Food Packaging and Shelf Life	
FOOD 3004 [0.5]	Food Engineering	
FOOD 4002 [0.5]	Analysis of Food Contaminants	
FOOD 4202 [0.5]	Micronutrients and Health	
FOOD 4203 [0.5]	Functional Foods and Natural Health Products	
3. 0.5 credit from:		0.5
BIOC 4708 [0.5]	Principles of Toxicology	
FOOD 4301 [0.5]	Food Toxicology	
4. 1.0 credit from:		1.0
FOOD 4905 [1.0]	Food Science Honours Workshop	
FOOD 4907 [1.0]	Food Science Honours Essay and Research Proposal	
FOOD 4908 [1.0]	Food Science Research Project	
5. 1.0 credits in:		1.0
BIOC 2200 [0.5]	Cellular Biochemistry	
BIOC 3101 [0.5]	General Biochemistry I	
B. Credits Not Included in the Major CGPA (10.5 credits)		
6. 0.5 credit from:		0.5
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues	
PHIL 2408 [0.5]	Bioethics	
7. 1.0 credit in:		1.0
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
8. 0.5 credit from:		0.5
0.5 credit in ECON at the 3000 level, or		
BUSI 2204 [0.5]	Basic Marketing	
9. 2.5 credits in:		2.5
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2204 [0.5]	Organic Chemistry II	
CHEM 2303 [0.5]	Analytical Chemistry II	
10. 2.0 credits in:		2.0
BIOL 1103 [0.5]	Foundations of Biology I	

BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2303 [0.5]	Microbiology	
11. 1.5 credits in:		1.5
MATH 1007 [0.5]	Elementary Calculus I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
STAT 2509 [0.5]	Introduction to Statistical Modeling II	
12. 0.5 credit in:		0.5
PHYS 1007 [0.5]	Elementary University Physics I	
13. 0.5 credit from:		0.5
BIOC 3102 [0.5]	General Biochemistry II	
BIOL 3104 [0.5]	Molecular Genetics	
14. 0.5 credits from:		0.5
Courses listed in but not used to fulfill item 13 above, one of:		
BIOC 3008 [0.5]	Bioinformatics	
BIOC 3102 [0.5]	General Biochemistry II	
BIOC 3202 [0.5]	Biophysical Techniques and Applications	
BIOC 3203 [0.5]	Biochemical Pharmacology	
BIOC 4004 [0.5]	Industrial Biochemistry	
BIOC 4202 [0.5]	Mutagenesis and DNA Repair	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 4106 [0.5]	Advances in Molecular Biology	
CHEM 3201 [0.5]	Advanced Organic Chemistry I	
15. 1.0 credits in free electives		1.0
Total Credits		20.0

Minor in Food Science (4.0 credits)

The Minor in Food Science is available to degree students registered in programs other than the Food Science B.Sc. Honours program. Note that there are several prerequisites in Chemistry, Biochemistry and Math that may also need to be satisfied.

Requirements

1. 0.5 credit in:		0.5
FOOD 1001 [0.5]	Introduction to Food Science	
2. 0.5 credit from:		0.5
FOOD 2001 [0.5]	Principles of Nutrition	
FOOD 2002 [0.5]	Food Processing	
3. 3.0 credits in FOOD at 2000 level or higher		3.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
- 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
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PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business

MATH 1401 [0.5] Elementary Mathematics for Economics I

MATH 1402 [0.5] Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic

performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op

option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Food Science: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Science Honours in Food Science;
2. Obtained and maintained an overall CGPA of 6.5 or higher and a major CGPA of 8.0 or higher in the first three years of academic study;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term, 1.0 credit from FOOD 3001, FOOD 3002, FOOD 3005;
5. Successfully completed, by the start date of the first work term, an additional 0.5 credit in FOOD at the 3000- or 4000-level, not already counted in Item 4

B.Sc. Honours Food Science students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: FOOD 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall		Fall	S	Fall	S	Fall	W/S	Fall	S
Winter		Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum

admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Food Science (FOOD) Courses

FOOD 1001 [0.5 credit]

Introduction to Food Science

Overview of the food industry. Production, processing, product development, packaging, chemistry, analysis, microbiology. Elements risk assessment, policy making and regulation.

Lectures three hours a week.

FOOD 2001 [0.5 credit]

Principles of Nutrition

Roles of nutrients, lipids, proteins, carbohydrates, fluids and electrolytes. Digestion, absorption, transport, energy metabolism. Disorders including diabetes, cardiovascular disease and osteoporosis. Nutrition through the life cycle. Prerequisite(s): CHEM 1002, BIOL 1103.

Lectures three hours a week.

FOOD 2002 [0.5 credit]**Food Processing**

Principles of major techniques used in food processing and preservation. Processing of specific food groups including cereals, oilseeds, dairy, beverages and frozen foods. Effects of processing on physico-chemical, rheological, and sensory characteristics. Role of research and development in food industry.

Prerequisite(s): FOOD 1001.

Lectures three hours a week.

FOOD 2003 [0.5 credit]**Regulation of the Canadian Food Industry**

Regulation of the Canadian food industry including regulators, regulatory powers, the process of enacting laws/regulation and food safety requirements. Food composition, standardization, advertising, labeling, packaging, ingredients, additives, and fortification requirements. Inspection, enforcement and compliance powers and policies.

Prerequisite(s): Second year standing.

Lectures three hours per week.

FOOD 2004 [0.5 credit]**Scientific Communication in Food Science**

Principles of effective scientific communication for scientific and non-scientific audiences. Applicable to laboratory reports, literature reviews, posters, presentations, and briefing notes.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001 and second-year standing in Food Science or Chemistry.

Workshop four hours a week.

FOOD 3001 [0.5 credit]**Food Chemistry**

Chemistry of the major components of foods such as proteins, lipids, carbohydrates and of the minor components such as enzymes, vitamins and various additives and their relationships to food stability and degradation.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001, FOOD 2001, CHEM 2204, BIOC 2200.

Lectures three hours a week and laboratory three hours a week.

FOOD 3002 [0.5 credit]**Food Analysis**

In-depth principles and practices of food proximate analysis. Introductory concepts of food adulteration and detection. Major techniques such as chromatography, colorimetry, spectroscopy, rheology.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001, FOOD 2001, FOOD 3001.

Lectures three hours a week, laboratory three hours a week.

FOOD 3003 [0.5 credit]**Food Packaging and Shelf Life**

An introduction to the materials used for food packaging, including their chemical and physical characteristics.

Interactions of these materials with food products, and their effects on shelf life of food.

Prerequisite(s): FOOD 2002.

Lectures three hours a week.

FOOD 3004 [0.5 credit]**Food Engineering**

Principles of food engineering. Unit operation in food processing, heat and mass transfer, material balances, fluid mechanics.

Prerequisite(s): FOOD 2002 and MATH 1007.

Lectures three hours a week.

FOOD 3005 [0.5 credit]**Food Microbiology**

Foodborne diseases, microbial growth and survival, food spoilage, food fermentation. Techniques for detecting and quantifying microorganisms in foods.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001, FOOD 2001, BIOL 2303.

Lectures three hours a week, laboratory three hours a week.

FOOD 3999 [0.0 credit]**Co-operative Work Term**

Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): Registration in the Food Science Co-operative Education option and permission of the Department.

Work term.

FOOD 4001 [0.5 credit]**Food Quality Control**

Factors affecting quality in manufacturing and processing of foods and principles of quality control and quality assurance. Sampling plans and statistical methods.

Applications of physical, chemical, biological and microbiological tests in quality control. Quality systems and standards.

Prerequisite(s): FOOD 2002, FOOD 2003, and third or fourth year standing.

Also offered at the graduate level, with different requirements, as FOOD 5104, for which additional credit is precluded.

Lectures three hours a week.

FOOD 4002 [0.5 credit]**Analysis of Food Contaminants**

Official methods to identify food contaminants and adulterated foods. Includes agricultural chemicals, veterinary drugs, toxins, metals, and allergens. Interpretation of results in the context of current Canadian and international food safety regulations.

Includes: Experiential Learning Activity

Prerequisite(s): BIOC 3101 or CHEM 3205 or CHEM 3305, and third or fourth year standing.

Laboratory four hours per week, tutorial one hour a week.

FOOD 4102 [0.5 credit]**Current Issues in Canadian Food Governance, Regulation and Policy**

Focus on the ever-changing and evolving issues in Canadian food governance, regulation and policy. Topical food safety, governance, policies, enforcement, trade and import/export issues and developments.

Prerequisite(s): FOOD 2003, and third or fourth year standing.

Lectures three hours a week.

FOOD 4103 [0.5 credit]**Food Safety Risk Assessment**

The role of risk management in providing science-based approaches to solving food safety problems. Risk management models and practical applications in critical risk management. An examination of actual risk assessments. Risk communication is addressed.

Prerequisite(s): BIOC 3101, and third or fourth-year standing.

Lectures three hours a week.

FOOD 4201 [0.5 credit]**Advanced Nutrition and Metabolism**

Metabolism of macronutrients in the human body. Detailed catabolic and anabolic reactions of carbohydrates, lipids and proteins. Regulatory control points in healthy and diseased states. Discussion of the literature pertaining to nutrition, metabolism and chronic disease.

Prerequisite(s): FOOD 2001, BIOC 3101 and fourth year standing.

Also offered at the graduate level, with different requirements, as FOOD 5101, for which additional credit is precluded.

Lectures three hours a week.

FOOD 4202 [0.5 credit]**Micronutrients and Health**

Use of scientific literature to examine human metabolism of vitamins and minerals and associated diseases throughout the life cycle. Development of advanced scientific literacy skills, with an emphasis on systematic reviews.

Prerequisite(s): BIOC 2200 or BIOL 2200 and third- or fourth-year standing.

Lectures three hours a week.

FOOD 4203 [0.5 credit]**Functional Foods and Natural Health Products**

Study of the bioactive components of functional foods and natural health products, for the improvement of health and nutrition. Sources and chemistry of bioactives, mechanisms of actions, process technology, efficacy and safety. Role of research and development in industry in commercialization of new products.

Prerequisite(s): BIOC 2200 or BIOL 2200 or BIOL 2201, and third or fourth year standing.

Also offered at the graduate level, with different requirements, as FOOD 5105, for which additional credit is precluded.

Lectures three hours a week.

FOOD 4301 [0.5 credit]**Food Toxicology**

Principles of toxicology as they apply to endogenous plant toxicants, endogenous animal poisons, mycotoxins, pesticide residues, veterinary drugs, food additives, heavy metals, and toxicants produced as a result of processing.

Prerequisite(s): BIOC 3101, FOOD 3001 and fourth-year standing in Food Science.

Lectures three hours a week.

FOOD 4905 [1.0 credit]**Food Science Honours Workshop**

Active learning in areas that include information literacy, critical evaluation of scientific literature, written and oral communication, evaluation and interpretation of results, statistics and data management. Emphasizes transferable skills that are most appropriate for non-research career paths.

Includes: Experiential Learning Activity

Precludes additional credit for FOOD 4907, FOOD 4908.

Prerequisite(s): Fourth-year standing in Food Science and a minimum of 1.5 credits in FOOD at the 3000 level.

Workshop three hours a week.

FOOD 4907 [1.0 credit]**Food Science Honours Essay and Research Proposal**

Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and an oral poster presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for FOOD 4905, FOOD 4908, CHEM 4907 and CHEM 4908.

Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department.

FOOD 4908 [1.0 credit]**Food Science Research Project**

Students in Food Science carry out a research project under the direction of a faculty member. A written report and an oral presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for FOOD 4905, FOOD 4907, CHEM 4907 and CHEM 4908.

Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department.

Laboratory and associated work equivalent to at least eight hours per week for two terms.

French

This section presents the requirements for programs in:

- French B.A. Honours
- French B.A. Combined Honours
- French B.A.
- Specialization in French and Francophone Studies B.G.In.S. Honours
- Stream in French and Francophone Studies B.G.In.S.
- Minor in French
- Minor in Québec Studies

Program Requirements

French

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit from:	1.0
FREN 1100 [1.0] French 3	
FREN 1110 [1.0] French 3: Writing	
FYSM 1408 [1.0] French on the World Stage	
2. 1.5 credit in:	1.5
FREN 2110 [1.0] French 4: Writing	
FREN 2701 [0.5] Travaux pratiques en français oral	
3. 1.0 credit in:	1.0
FREN 2202 [0.5] Introduction aux études littéraires 1	
FREN 2203 [0.5] Introduction aux études littéraires 2	
4. 1.0 credit in:	1.0
FREN 2401 [1.0] Introduction à la linguistique française	
5. 1.0 credit in:	1.0
FREN 3050 [0.5] Compétences critiques	
FREN 3060 [0.5] Perfectionnement de la grammaire par la pratique	
6. 2.5 credits at the 3000-level in the following series:	2.5
a. Literature: FREN 3200 series of courses	
b. Linguistics: FREN 3400 series of courses	
7. 0.5 credit in:	0.5
FREN 4060 [0.5] Projet de recherche supervisé	
8. 1.5 credits in FREN at the 4000-level	1.5
9. 1.0 credits in FREN at the 3000-level or higher	1.0
B. Credits Not Included in the Major CGPA (9.0 credits)	
10. 7.5 credits in electives not in FREN	7.5

11. 1.5 credits in free electives	1.5
Total Credits	20.0

Notes:

1. Students exempted from either one of the courses in Item 1 or 2 above must replace it with another FREN course.

French

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.5 credits)

1. 1.0 credit from:	1.0
FREN 1100 [1.0] French 3	
FREN 1110 [1.0] French 3: Writing	
FYSM 1408 [1.0] French on the World Stage	
2. 1.5 credit from:	1.5
FREN 2100 [1.0] French 4	
FREN 2110 [1.0] French 4: Writing	
FREN 2701 [0.5] Travaux pratiques en français oral	
3. 1.0 credit in:	1.0
FREN 2202 [0.5] Introduction aux études littéraires 1	
FREN 2203 [0.5] Introduction aux études littéraires 2	
4. 1.0 credit in:	1.0
FREN 2401 [1.0] Introduction à la linguistique française	
5. 1.0 credit in:	1.0
FREN 3050 [0.5] Compétences critiques	
FREN 3060 [0.5] Perfectionnement de la grammaire par la pratique	
6. 1.0 credit at the 3000-level in the following:	1.0
a. Literature: FREN 3200 series of courses	
b. Linguistics: FREN 3400 series of courses	
7. 1.0 credit in FREN at the 4000-level	1.0
B. Additional Requirements (12.5 credits)	12.5
8. The requirements from the other discipline must be satisfied	
9. Sufficient free electives to make 20.0 credits for the degree	
Total Credits	20.0

Note: students exempted from either one of the courses in Item 1 or 2 above must replace it with another FREN course.

French

B.A. (15.0 credits)

A. Credits included in the Major CGPA (6.5 credits)

1. 1.0 credit from:	1.0
FREN 1100 [1.0] French 3	
FREN 1110 [1.0] French 3: Writing	
FYSM 1408 [1.0] French on the World Stage	
2. 1.5 credit in:	1.5
FREN 2110 [1.0] French 4: Writing	
FREN 2701 [0.5] Travaux pratiques en français oral	
3. 1.0 credit in:	1.0
FREN 2202 [0.5] Introduction aux études littéraires 1	
FREN 2203 [0.5] Introduction aux études littéraires 2	
4. 1.0 credit in:	1.0

FREN 2401 [1.0]	Introduction à la linguistique française	
5. 1.0 credits at the 3000-level in the following:		1.0
a. Literature: FREN 3200 series of courses		
b. Linguistics: FREN 3400 series of courses		
6. 1.0 credit in FREN at the 3000-level or higher		1.0
B. Credits not included in the Major CGPA (8.5 credits)		
7. 6.0 credits in electives not in FREN		6.0
8. 2.5 credits in free electives		2.5
Total Credits		15.0

Note: students exempted from either one of the courses in Item 1 above must replace it with another FREN course.

Specialization in French and Francophone Studies

B.G.In.S. Honours (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses		4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation	
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3. 7.5 credits in: the Specialization

a. 3.0 credits in: Foundations		3.0
FYSM 1408 [1.0]	French on the World Stage ¹	
FREN 2202 [0.5]	Introduction aux études littéraires 1	
FREN 2203 [0.5]	Introduction aux études littéraires 2	
FREN 2401 [1.0]	Introduction à la linguistique française	

b. 0.5 credit in: Methods		0.5
FREN 3050 [0.5]	Compétences critiques	

c. 1.5 credits from: French and Francophone Studies at the 3000-level

FREN 3213 [0.5]	Du Baroque aux Lumières	
FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950	
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature	
FREN 3414 [0.5]	Sociolinguistique du français	
FREN 3415 [0.5]	Histoire du français	

d. 1.0 credit in: French and Francophone Studies - International Experience

1.0 credit in approved courses at the 3000-level or above taken in French, on exchange or a letter of permission, at a French-language university abroad

e. 1.5 credits from: French and Francophone Studies at the 4000-level

FREN 4212 [0.5]	Littératures francophones	
FREN 4213 [0.5]	Littérature québécoise et canadienne d'expression française	
FREN 4214 [0.5]	Genre et mouvement	
FREN 4215 [0.5]	Problématiques contemporaines	
FREN 4300 [0.5]	Experiential learning in French and Francophone studies	
FREN 4412 [0.5]	Diversité du français	
FREN 4413 [0.5]	Diachronie du français	
FREN 4414 [0.5]	Analyse du français	
FREN 4415 [0.5]	Variation du français	

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives

C. Additional Requirements

5. The International Experience Requirement must be met through an international exchange or a letter of permission (see item 3.d).

6. To satisfy the Language Requirement, students must complete FREN 2100 [1.0], FREN 3701 [0.5] and FREN 3702 [0.5], or demonstrate equivalent proficiency.

Total Credits **20.0**

Notes:

1. Students exempted from FYSM 1408 in Item 3.a. must replace it with another 1.0 credit in FREN at the 2000 level or higher.

Stream in French and Francophone Studies

B.G.In.S. (15.0 credits)

A. Credits included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses		4.0
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	

2. 4.0 credits from: the Stream

a. 3.0 credits in: Foundations		3.0
FYSM 1408 [1.0]	French on the World Stage ¹	
FREN 2202 [0.5]	Introduction aux études littéraires 1	
FREN 2203 [0.5]	Introduction aux études littéraires 2	
FREN 2401 [1.0]	Introduction à la linguistique française	

b. 1.0 credit in: French and Francophone Studies at the 3000-level

FREN 3213 [0.5]	Du Baroque aux Lumières	
FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950	
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature	
FREN 3414 [0.5]	Sociolinguistique du français	

FREN 3415 [0.5]	Histoire du français	
B. Credits Not Included in the Major CGPA (7.0 credits)		
3. 7.0 credits in:	Free Electives	7.0
C. Additional Requirements		
4. To satisfy the Language Requirement, students must complete FREN 2100 [1.0], or demonstrate equivalent proficiency.		
Total Credits		15.0

Notes:

1. Students exempted from FYSM 1408 in Item 2.a. must replace it with another 1.0 credit in FREN at the 2000 level or higher.

Minor in French (4.0 credits)

Open to all undergraduate degree students not in French programs.

Requirements

1. 1.0 credit from:		1.0
FYSM 1408 [1.0]	French on the World Stage	
FREN 1100 [1.0]	French 3 or FREN 1110 [1.0] French 3: Writing	
2. 2.0 credit in:		2.0
FREN 2100 [1.0]	French 4 or FREN 2110 [1.0] French 4: Writing	
FREN 2202 [0.5]	Introduction aux études littéraires 1 & FREN 2203 [0.5] Introduction aux études littéraires 2 or FREN 2401 [1.0] Introduction à la linguistique française	
3. 1.0 credit in FREN	at the 3000-level or higher.	1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Notes:

1. Students exempted from courses in Item 1 must replace it with another FREN course.

Minor in Québec Studies (4.0 credits)

Open to all undergraduate degree students. Additional courses containing Québec content may apply to the minor if approved by the Advisor in advance.

Requirements:

1. 2.0 credits in:		2.0
CDNS 2510 [0.5]	Memory and History in Québec	
CDNS 3550 [0.5]	Diversity in Québec and Francophone Canada	
FREN 2203 [0.5]	Introduction aux études littéraires 2	
HIST 3301 [0.5]	Québec Since 1800	
2. 1.5 credits in Approved Québec Studies Electives (see below)		1.5
3. 0.5 credit at the 3000-level or above in Approved Québec Studies Electives (see below)		0.5
Total Credits		4.0

Approved Québec Studies Electives

Art History

ARTH 2002 [0.5] Historical Art in Canada

Canadian Studies

CDNS 2300 [0.5] Nationalism and Multiculturalism in Canada

CDNS 4510 [0.5] Special Topics in Québec Studies

Film Studies

FILM 3209 [0.5] Topics in Canadian Cinema

French

FREN 2401 [1.0] Introduction à la linguistique française

FREN 3414 [0.5] Sociolinguistique du français

FREN 3417 [0.5] Le français au Canada

FREN 4213 [0.5] Littérature québécoise et canadienne d'expression française

FREN 4300 [0.5] Experiential learning in French and Francophone studies

History

HIST 2301 [0.5] Canadian Political History

HIST 3206 [0.5] Place and Politics in Canadian History

HIST 4303 [0.5] Society and Culture in Canada

HIST 4304 [1.0] Canada: Politics & Society

Political Science

PSCI 4005 [0.5] Canadian Federalism

PSCI 4009 [0.5] Quebec Politics

French Proficiency Examination

English-speaking students who wish to graduate with a B.A. (15 credit) or B.A. Honours in French, a B.A. Combined Honours in French, and a B.J. Combined Honours in French are normally required to pass an oral examination testing their proficiency in spoken French. The examination normally takes place during the second year for students in the 15 credit program and during the third year for students in the B.A. Honours. Students have the option of repeating the examination during the following academic year.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth

areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;

3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours French: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours in French;
2. Obtained and maintained an 8.0 CGPA overall with a major CGPA of 9.0;
3. Have obtained third-year standing by the first work term;
4. Successfully completed before beginning first work term: FREN 2401; FREN 2202 and FREN 2203; and at least one 3000-level course in French.

Students in B.A. Honours French must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: FREN 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	W/S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or

supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed

as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

French Interdisciplinary Studies (FINS) Courses

These courses are intended to meet the needs of a broad range of students who are interested in expanding their knowledge of the French-language presence in other disciplines, or in improving their passive knowledge of written and spoken French (reading and listening) with a view to applying this knowledge in other disciplines.

Some FINS courses are offered with English as the language of instruction.

French Placement for Language Students

Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses. Students desiring a French credit to satisfy the language requirement of their department or school should consult that department or school.

FINS 2105 [0.5 credit]**French Reading I**

Development of reading skills, especially relating to academic texts. Basic French grammar and vocabulary. Given in English. Open to beginners. No auditors. Precludes additional credit for FREN 1006. Prerequisite(s): permission of the Department. Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 2205 [0.5 credit]**Oral Comprehension I**

Training in basic comprehension of spoken French, through the study of selected and edited video and audio material. Oral documents in French; analyses, discussion, reporting and testing in English. No auditors. Prerequisite(s): permission of the Department.

FINS 2511 [0.5 credit]**Introduction à la société et à la culture québécoises (version française)**

Ce cours exclusivement en ligne permettra de découvrir et d'analyser des référents dominants de la trame historique du Québec de même que les débats entourant l'identité et le nationalisme et les relations avec le Canada anglais. Also listed as CDNS 2510/FINS 2510 (in English), CDNS 2511.

Precludes additional credit for CDNS 2510 and FINS 2510.

Prerequisite(s): niveau de deuxième année ou permission de L'École d'études canadiennes.

Exclusivement en ligne. Équivalent d'un cours de trois heures par semaine, accessible toute la semaine.

FINS 3105 [0.5 credit]**French Reading II**

Reading knowledge for academic purposes. Advanced reading strategies. Individual reading in the student's specialization. Given in English. No auditors. Precludes additional credit for FREN 1006.

Prerequisite(s): FINS 2105 or permission of the Department.

Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 3205 [0.5 credit]**Oral Comprehension II**

Advanced training and practice in the comprehension of authentic oral materials in French. Individual assignments in the student's specialization. Oral documents in French; analysis, discussion, reporting and testing in English and French. No auditors.

Prerequisite(s): FINS 2205 or permission of the Department.

FINS 3405 [0.5 credit]**French for Special or Professional Purposes I**

Topics may vary from year to year. Consult the Web site. Prerequisite(s): permission of the Department.

FINS 3406 [0.5 credit]**French for Special or Professional Purposes II**

Topics may vary from year to year. Consult the Web site. Prerequisite(s): permission of the Department.

FINS 3407 [0.5 credit]**French for Special or Professional Purposes III**

Topics may vary from year to year. Consult the Web site. Prerequisite(s): permission of the Department.

FINS 3801 [0.5 credit]**Selected Topics in French A**

Students may take a third-year course offered in the Department of French while submitting course work in English. This course does not count towards any degree program in French.

Prerequisite(s): third-year standing and permission of the Department.

Hours to be determined.

FINS 4801 [0.5 credit]**Selected Topics in French A**

Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

FINS 4802 [0.5 credit]**Selected Topics in French B**

Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

French (FREN) Courses**French Placement for Language Students**

Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering, as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses.

Students desiring a French credit to satisfy the language requirement of their department or school should consult that department or school.

FREN 1001 [1.0 credit]**French 1**

This course is designed for absolute beginners in the language. Classes use audio-visual methods, and emphasis is given to the spoken language. Introduction to reading and writing. Compulsory attendance. Limited enrolment. No auditors. Oral interaction required. Prerequisite(s): placement test on Carleton Central before registering. Lecture three hours a week.

FREN 1002 [1.0 credit]**French 2**

Taught in French for students who have had exposure to French but who have difficulty using it in day-to-day communication. Emphasis on oral expression and comprehension; development of reading and writing skills. Oral practice, presentations, interviews, cultural activities, grammar. Compulsory attendance, participation. Oral interaction required. Prerequisite(s): Grade of C or higher in FREN 1001 or placement test on Carleton Central before registering. Lecture three hours a week.

FREN 1100 [1.0 credit]**French 3**

Taught in French. Emphasis on speaking, listening, reading and writing skills. Oral presentations, discussions, interviews, reading of novels and magazine articles, listening activities, grammar exercises, compositions. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required. Precludes additional credit for FREN 1110. Prerequisite(s): Grade of C or higher in FREN 1002 or placement test on Carleton Central before registering. Lecture three hours a week.

FREN 1110 [1.0 credit]**French 3: Writing**

Taught in French. For students with low intermediate writing skills in French. Improvement of spelling, grammar, sentence-structure and vocabulary. Study of the processes involved in the production of a variety of texts. Introduction to the use of references. Self-correction. Attendance, participation compulsory. Oral interaction required. Precludes additional credit for FREN 1100. Prerequisite(s): Grade of C or higher in FREN 1002 or placement test on Carleton Central before registering. Lecture three hours a week.

FREN 2100 [1.0 credit]**French 4**

Taught in French. For non-francophone students. Advanced speaking, listening, reading and writing skills. Advanced level reading from various sources, including literary texts. Grammar exercises, essays, oral presentations. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required. Precludes additional credit for FREN 2110. Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering. Lectures three hours a week.

FREN 2110 [1.0 credit]**French 4: Writing**

Taught in French. For students with intermediate French writing skills. Refinement of spelling, grammar, sentence-structure and vocabulary; accuracy and textual organization. Essay-writing. Use and referencing of various sources. Self-correction. Attendance and participation compulsory. Oral interaction required. Precludes additional credit for FREN 2100. Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering. First week: compulsory placement. Limited enrolment. No auditors. Lectures three hours a week.

FREN 2202 [0.5 credit]**Introduction aux études littéraires 1**

Survol historique des littératures d'expression française : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire. Precludes additional credit for FREN 2201. Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110. Cours trois heures par semaine.

FREN 2203 [0.5 credit]**Introduction aux études littéraires 2**

Survol historique des littératures d'expression française au Québec et au Canada : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire. Precludes additional credit for FREN 2201. Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110. Cours trois heures par semaine.

FREN 2401 [1.0 credit]**Introduction à la linguistique française**

Étude de la structure et du fonctionnement du système linguistique à travers l'analyse de données du français (de France et du Canada). La construction du sens, des sons au discours; code oral et écrit.

Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.

Cours trois heures par semaine.

FREN 2701 [0.5 credit]**Travaux pratiques en français oral**

Travaux pratiques pour développer l'aisance et la fluidité dans l'expression orale. This course is not suitable for francophones.

Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering.

Cours trois heures par semaine.

FREN 3050 [0.5 credit]**Compétences critiques**

Initiation aux techniques et pratiques de la réflexion universitaire : documentation (bibliothèque, bases de données, bibliographies critiques), lecture (analyse, synthèse et évaluation critique de textes de savoir) et réflexion (cadre théorique, méthode d'analyse, pratique du discours raisonné).

Prerequisite(s): FREN 2202, FREN 2203 and FREN 2401, or permission of the Department.

Cours trois heures par semaine.

FREN 3060 [0.5 credit]**Perfectionnement de la grammaire par la pratique**

Analyse et pratique réfléchie des formes de la grammaire dans le discours: Structures des phrases, marques d'accord, concordance des temps, prépositions et compléments, homonymie et homographie, faux amis et anglicismes. Développement des techniques efficaces d'autocorrection et maîtrise d'outils informatisés.

Prerequisite(s): FREN 2202 and FREN 2203 or FREN 2401, or permission of the Department.

Cours trois heures par semaine.

FREN 3212 [0.5 credit]**Des manuscrits aux belles-lettres : de la littérature médiévale à l'humanisme**

Étude d'une sélection de textes, tirés de divers genres, permettant d'explorer les origines de la littérature française : oralité et écriture; chansons de geste; courtoisie; récits de voyages; littérature de la cour; humanisme. Différentes approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3213 [0.5 credit]**Du Baroque aux Lumières**

Étude des 17^e et 18^e siècles : raison et universalisme, encyclopédisme, construction et représentation de l'altérité, colonialisme et esclavagisme. Analyse d'importants développements littéraires : essai et conte philosophiques, théâtre et critique sociale, évolution du discours romanesque. Approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3214 [0.5 credit]**Révolutions, avant-gardes et ruptures : du 19^e siècle aux années 1950**

Étude de quelques grands mouvements ayant rythmé la vie des lettres francophones : romantisme, réalisme, naturalisme, symbolisme, surréalisme, modernisme. La littérature de la décolonisation et l'émergence de la littérature canadienne-française. Analyse des genres et de leur évolution. Approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3215 [0.5 credit]**Les ères du soupçon : contemporanéités de la littérature**

Études des principales orientations définissant les littératures francophones contemporaines depuis la fin de la Seconde Guerre mondiale : littérature engagée, existentialisme, nouveau roman. Littérature du Québec et du Canada français. Littératures postcoloniales, émergentes, transnationales. Approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3216 [0.5 credit]**Problématique littéraire**

Étude approfondie d'une problématique dans le champ des études littéraires. Lectures critiques, réflexion théorique et études d'œuvres littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.

Cours trois heures par semaine.

FREN 3217 [0.5 credit]**Oeuvre et auteur-e(s)**

Étude approfondie d'un(e) auteur(e) ou groupe d'auteur(e)s et de leur œuvre. Lectures critiques, théoriques et littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.

Cours trois heures par semaine.

FREN 3218 [0.5 credit]**Genre et mouvement**

Étude approfondie d'un genre ou mouvement littéraire. Conditions d'émergence (contextes: historique, social, artistique, etc). Textes théoriques et manifestes. Principaux représentants. Influence (continuations, ruptures). Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.

FREN 3251 [0.5 credit]**Introduction aux méthodes d'analyse littéraire**

Présentation et application de diverses approches théoriques du texte littéraire ou étude approfondie d'une approche théorique particulière (analyses structurelles, méthodes d'interprétation, contextualisation sociohistorique, poétique, etc.).
Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.
Cours trois heures par semaine.

FREN 3411 [0.5 credit]**Phonétique et phonologie du français**

Étude empirique et théorique des éléments et systèmes phonétiques et phonologiques du français. Processus segmentaux et suprasegmentaux, structures syllabiques et prosodiques. Problèmes classiques de la phonologie française.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3412 [0.5 credit]**Morphologie du français**

Étude de la forme des unités lexicales et grammaticales du français et de leur portée signifiante. Analyse du système flexionnel du français et des mécanismes de formation des mots.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3413 [0.5 credit]**Syntaxe du français**

Études de la structure et des composantes de la phrase: mots et syntagmes. Analyse syntaxique de la phrase simple et complexe. Modèle hiérarchique de l'organisation de la phrase.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3414 [0.5 credit]**Sociolinguistique du français**

Le français, une réalité hétérogène. Approche variationniste, qualitative et quantitative, de l'étude du français dans ses dimensions dialectales, sociales et stylistiques. Variations intra-individuelles et entre individus. Facteurs externes de la variation interne du français. Diversités du français.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3415 [0.5 credit]**Histoire du français**

Évolution interne de l'histoire du français et de ses influences externes. De sa naissance, présumée et réelle, à ses états actuels. Les langues contributrices. Contacts linguistiques. Dynamiques du changement linguistique. Véhicularisation et vernacularisation. Idéologies de la langue française.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3416 [0.5 credit]**Le français dans le monde**

Présentation des variétés de français parlé dans le monde, principalement à l'extérieur du Canada. Étude des aspects historiques et sociopolitiques de la diffusion du français. Analyse des traits linguistiques propres aux variétés. Colonisation, créolisation, emprunt linguistique, variation régionale, aménagement linguistique.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3417 [0.5 credit]**Le français au Canada**

Présentation des variétés de français parlé au Canada. Étude des aspects historiques et sociopolitiques de l'implantation du français en Nouvelle-France. Variétés laurentienne et acadienne. Analyse des traits linguistiques. Enjeux sociolinguistiques. Contact des langues, bilinguisme, minorités linguistiques.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3451 [0.5 credit]**Thème en linguistique**

Étude d'un thème particulier en linguistique française. Le contenu varie selon l'année. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.
Prerequisite(s): FREN 2401 or permission of the Department.
Cours trois heures par semaine.

FREN 3511 [0.5 credit]**Expression écrite et traduction**

Perfectionnement de l'expression écrite au moyen d'un apprentissage appliqué de la traduction. Analyses des principales interférences syntaxiques, sémantiques et discursives entre le français et l'anglais. Approfondissement des pratiques de textualisation: cohérence et cohésion, idiomatization, registres, paraphrase, considérations stylistiques, etc. Approche privilégiant le texte pragmatique. Prerequisite(s): one FREN course at the 2000-level, or permission of the Department. Cours trois heures par semaine.

FREN 3701 [0.5 credit]**Français oral**

Techniques avancées d'expression orale. This course is not suitable for francophones. Prerequisite(s): one FREN course at the 2000 level, or permission of the Department. Cours trois heures par semaine.

FREN 3702 [0.5 credit]**Français écrit**

Techniques avancées d'expression écrite. Prerequisite(s): one FREN course at the 2000-level, or permission of the Department. Cours trois heures par semaine.

FREN 3900 [0.5 credit]**Apprentissage et enseignement du français langue seconde**

Initiation aux études des programmes au Canada et ailleurs. Processus d'acquisition des habiletés d'expression et de compréhension. Survol des théories passées et actuelles. Appréciation et critique de pratiques pédagogiques. Prerequisite(s): one FREN course at the 2000-level, or permission of the Department. Cours trois heures par semaine.

FREN 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

FREN 4060 [0.5 credit]**Projet de recherche supervisé**

Développement d'un projet individuel supervisé en littérature ou en linguistique, amorcé dans un cours antérieur. Raffinement de l'expression et des idées. Présentation publique des résultats. Prerequisite(s): fourth-year standing in the BA Honours in French. Unscheduled

FREN 4212 [0.5 credit]**Littératures francophones**

Analyse de problématiques liées à la francophonie littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5212, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4213 [0.5 credit]**Littérature québécoise et canadienne d'expression française**

Étude approfondie portant sur un ou plusieurs aspects des littératures d'expression française au Canada. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5213, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4214 [0.5 credit]**Genre et mouvement**

Étude approfondie d'un thème, d'un mouvement, d'un genre dans le champ littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5214, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4215 [0.5 credit]**Problématiques contemporaines**

Étude de questions contemporaines dans le domaine littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes. Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department. Also offered at the graduate level, with different requirements, as FREN 5215, for which additional credit is precluded. Cours trois heures par semaine.

FREN 4300 [0.5 credit]**Experiential learning in French and Francophone studies**

Topics in French language, literature or linguistics. Application of language skills in a francophone context. Topic and location may vary; consult Departmental website.

Includes: Experiential Learning Activity

Prerequisite(s): FREN 2202 and FREN 2203, or FREN 2401, depending on the topic, and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5501, for which additional credit is precluded.

FREN 4301 [0.5 credit]**Experiential learning: Séminaire d'été à Québec**

Exploration of Quebec City and its literary, cultural and historical significance. Application of language skills in Quebec City.

Includes: Experiential Learning Activity

Precludes additional credit for FREN 4300 if taken before 2022.

Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5502, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4412 [0.5 credit]**Diversité du français**

Études des variétés du français, dans ses dimensions spatiales. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4412.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4413 [0.5 credit]**Diachronie du français**

Étude du français, dans ses dimensions historiques. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4413.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4414 [0.5 credit]**Analyse du français**

Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4414.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the department.

Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4415 [0.5 credit]**Variation du français**

Étude des variations internes de la langue, dans ses dimensions orales et écrites. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4415.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4511 [0.5 credit]**Traduction : méthodologie et pratique**

Initiation à différents principes et approches méthodologiques de la traduction. Analyse de texte appliquée à la traduction, repérage raisonné des difficultés, typologie des fautes de traduction, étude de divers procédés, documentation, terminologie et révision. Approche privilégiant une typologie textuelle variée.

Prerequisite(s): FREN 3511 or permission of the Department.

Cours trois heures par semaine.

FREN 4801 [1.0 credit]**Tutorial A**

Special topics in an aspect of French studies under the supervision of a faculty member.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

FREN 4802 [0.5 credit]**Tutorial B**

Special topics in an aspect of French studies under the supervision of a faculty member.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

FREN 4900 [0.5 credit]

Thème choisi en apprentissage et enseignement du français langue seconde

Approfondissement de considérations théoriques et pratiques reliées à l'enseignement et l'apprentissage du français comme langue seconde. Analyse de composantes pédagogiques générales et en contexte, applications didactiques. Évaluation, critères et standards. Le contenu précis de ce cours varie selon les années. Consulter le site Web.

Prerequisite(s): fourth-year standing or permission of the Department.

Cours trois heures par semaine.

Geography

This section presents the requirements for programs in:

- Geography B.A. Honours
- Geography with Concentration in Physical Geography B.A. Honours
- Geography with Concentration in Urban Geography B.A. Honours
- Geography B.A. Combined Honours
- Geography B.A.
- Earth Sciences and Physical Geography B.Sc. Combined Honours
- Physical Geography B.Sc. Honours
- Specialization in Globalization and the Environment B.G.In.S. Honours
- Stream in Globalization and the Environment B.G. In.S.
- Minor in Geography
- Minor in Physical Geography
- Minor in Urban Studies

Program Requirements

Geography

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.5 credits in:	1.5
GEOG 1010 [0.5]	Global Environmental Systems
GEOG 1020 [0.5]	People, Places and Environments
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution
2. 0.5 credit from:	0.5
GEOG 2020 [0.5]	Ecosystems of Canada
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
3. 1.0 credit in:	1.0
GEOG 2005 [0.5]	Introduction to Qualitative Research
GEOG 2006 [0.5]	Introduction to Quantitative Research
4. 1.5 credits from:	1.5
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture

GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
5. 0.5 credit from:		0.5
GEOG 3000 [0.5]	Honours Field Course	
GEOG 3030 [0.5]	Regional Field Excursion	
6. 0.5 credit from:		0.5
GEOG 3001 [0.5]	Doing Qualitative Research	
GEOG 3003 [0.5]	Quantitative Geography	
GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons	
GEOM 3002 [0.5]	Introduction to Remote Sensing	
GEOM 3007 [0.5]	Cartographic Theory and Design	
7. 1.0 credit from:		1.0
GEOG 3021 [0.5]	Geographies of Culture and Identity	
GEOG 3022 [0.5]	Environmental and Natural Resources	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3024 [0.5]	Understanding Globalization	
GEOG 3025 [0.5]	Geographies of Selected Regions	
GEOG 3026 [0.5]	Topics in the Geography of Canada	
GEOG 3206 [0.5]	Health, Environment, and Society	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
GEOG 3501 [0.5]	Geographies of the Canadian North	
8. 1.0 credit in GEOG and/or GEOM at the 3000-level or above		1.0
9. 2.5 credits from:		2.5
a) Thesis pathway:		
GEOG 4909 [1.0] plus 1.5 credits from GEOG/GEOM and/or ENST at the 4000-level		
b) Course pathway:		
2.5 credits from GEOG/GEOM and/or ENST at the 4000-level		
B. Credits Not Included in the Major CGPA (10.0 credits)		
10. 8.0 credits in electives not in GEOG		8.0
11. 2.0 credits in free electives		2.0
Total Credits		20.0

Geography with Concentration in Physical Geography

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.5 credits in:	1.5
GEOG 1010 [0.5]	Global Environmental Systems
GEOG 1020 [0.5]	People, Places and Environments
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution
2. 2.0 credits in:	2.0
GEOG 2005 [0.5]	Introduction to Qualitative Research
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
3. 1.0 credit from:	1.0
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2200 [0.5]	Global Connections

GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
4. 0.5 credit in:		0.5
GEOG 3000 [0.5]	Honours Field Course	
GEOG 3010 [0.5]	Field Methods in Physical Geography	
5. 2.0 credits from:		2.0
GEOG 3003 [0.5]	Quantitative Geography	
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
GEOG 3108 [0.5]	Soil Properties	
GEOM 3002 [0.5]	Introduction to Remote Sensing	
6. 0.5 credit in:		0.5
a) Co-op students must complete:		
0.5 cr in GEOG or GEOM at 4000-level, excluding GEOG 4406, GEOG 4408, GEOM 4406, GEOM 4408		
b) All other students must complete:		
GEOG 4406 [0.5]	Practicum I	
7. 2.5 credits from:		2.5
a) Thesis pathway:		
i. 1.0 credit in:		
GEOG 4909 [1.0]	Honours Research Thesis	
ii. 1.5 credits from:		
GEOM 4003 [0.5]	Remote Sensing of the Environment	
GEOG 4004 [0.5]	Environmental Impact Assessment	
GEOG 4005 [0.5]	Directed Studies in Geography	
GEOG 4013 [0.5]	Cold Region Hydrology	
GEOG 4017 [0.5]	Global Biogeochemical Cycles	
GEOG 4101 [0.5]	Two Million Years of Environmental Change	
GEOG 4103 [0.5]	Water Resources Engineering	
GEOG 4104 [0.5]	Microclimatology	
GEOG 4108 [0.5]	Permafrost	
OR		
b) Course pathway:		
2.5 credits from:		
GEOM 4003 [0.5]	Remote Sensing of the Environment	
GEOG 4004 [0.5]	Environmental Impact Assessment	
GEOG 4005 [0.5]	Directed Studies in Geography	
GEOG 4013 [0.5]	Cold Region Hydrology	
GEOG 4017 [0.5]	Global Biogeochemical Cycles	
GEOG 4101 [0.5]	Two Million Years of Environmental Change	
GEOG 4103 [0.5]	Water Resources Engineering	
GEOG 4104 [0.5]	Microclimatology	
GEOG 4108 [0.5]	Permafrost	
GEOG 4408 [0.5]	Practicum II	
B. Credits Not Included in the Major CGPA (10.0 credits)		
8. 8.0 credits in	electives not in GEOG	8.0

9. 2.0 credits in	free electives.	2.0
Total Credits		20.0
Geography with Concentration in Urban Geography		
B.A. Honours (20.0 credits)		
A. Credits included in the Major CGPA (11.0 credits)		
1. 1.0 credit in:		1.0
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 1023 [0.5]	Introduction to Cities and Urbanization	
2. 0.5 credit from:		0.5
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
GEOG 1020 [0.5]	People, Places and Environments	
3. 0.5 credit from:		0.5
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
GEOG 2020 [0.5]	Ecosystems of Canada	
4. 1.0 credit in:		1.0
GEOG 2005 [0.5]	Introduction to Qualitative Research	
GEOG 2006 [0.5]	Introduction to Quantitative Research	
5. 0.5 credit in:		0.5
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
6. 1.0 credit from:		1.0
GEOG 2200 [0.5]	Global Connections	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
7. 0.5 credit from:		0.5
GEOG 3000 [0.5]	Honours Field Course	
GEOG 3030 [0.5]	Regional Field Excursion	
8. 0.5 credit from:		0.5
GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons	
GEOG 3001 [0.5]	Doing Qualitative Research	
GEOM 3002 [0.5]	Introduction to Remote Sensing	
GEOG 3003 [0.5]	Quantitative Geography	
GEOM 3007 [0.5]	Cartographic Theory and Design	
9. 0.5 credit in:		0.5
GEOG 3023 [0.5]	Cities in a Global World	
10. 0.5 credit from:		0.5
GEOG 3021 [0.5]	Geographies of Culture and Identity	
GEOG 3022 [0.5]	Environmental and Natural Resources	
GEOG 3024 [0.5]	Understanding Globalization	
GEOG 3025 [0.5]	Geographies of Selected Regions	
GEOG 3026 [0.5]	Topics in the Geography of Canada	
GEOG 3206 [0.5]	Health, Environment, and Society	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
GEOG 3501 [0.5]	Geographies of the Canadian North	
11. 1.0 credit in:		1.0
GEOG 4023 [0.5]	Seminar in Special Topics on the City	

GEOG 4323 [0.5]	Urban and Regional Planning	
12. 0.5 credit from:		0.5
AFRI 3004 [0.5]	The African City	
ARCU 3100 [0.5]	The Morphology of the City	
HIST 3209 [0.5]	Canadian Urban History	
HUMR 3002 [0.5]	Right to the City	
13. 0.5 credit from:		0.5
ARCH 4201 [0.5]	History of Modern Housing	
ARCU 4103 [0.5]	Cities	
ARCU 4300 [0.5]	Theories of Urbanism	
ARCU 4600 [0.5]	Post-WWII Urbanism	
ARCU 4700 [0.5]	Urban Utopias	
ARCU 4801 [0.5]	Topics in Urbanism	
GEOG 4000 [0.5]	Field Studies (when offered with an urban theme)	
GEOG 4005 [0.5]	Directed Studies in Geography (with urban theme)	
GEOG 4007 [0.5]	Special Topics in Geography and Environmental Studies	
INDG 4001 [0.5]	Indigeneity in the City	
14. 2.5 credits from:		2.5
a) Thesis pathway:		
GEOG 4909 [1.0]	Honours Research Thesis	
	1.5 credits in GEOG/GEOM and/or ENST at the 4000 level	
b) Course pathway:		
	2.5 credits in GEOG/GEOM and/or ENST at the 4000 level	
B. Credits Not Included in the Major CGPA (9.0 credits)		
15. 7.5 credits in	electives not in GEOG	7.5
16. 1.5 credits in	free electives	1.5
Total Credits		20.0

Geography

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Geography Major CGPA (7.0 credits)

1. 1.0 credit in:		1.0
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 1020 [0.5]	People, Places and Environments	
2. 0.5 credit from:		0.5
GEOG 2020 [0.5]	Ecosystems of Canada	
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
3. 1.0 credit from:		1.0
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2200 [0.5]	Global Connections	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
4. 1.0 credit from:		1.0
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
GEOG 2005 [0.5]	Introduction to Qualitative Research	
GEOG 2006 [0.5]	Introduction to Quantitative Research	

5. 1.5 credits in	GEOG and/or GEOM at the 3000- level or above	1.5
6. 1.0 credit in	GEOG and/or GEOM at the 4000- level	1.0
7. 1.0 credit in:		1.0
a) Thesis pathway		
GEOG 4909 [1.0]	Honours Research Thesis	
OR		
b) Course pathway		
	1.0 credit in GEOG at the 4000-level	
B. Additional Requirements (13.0 credits)		13.0
8.	The requirements of the other Honours discipline must be satisfied	
9.	Sufficient free electives to total 20.0 credits for the program.	
Total Credits		20.0

Geography

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit in:		1.0
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 1020 [0.5]	People, Places and Environments	
2. 0.5 credit from:		0.5
GEOG 2020 [0.5]	Ecosystems of Canada	
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
3. 1.0 credit from:		1.0
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
GEOG 2005 [0.5]	Introduction to Qualitative Research	
GEOG 2006 [0.5]	Introduction to Quantitative Research	
4. 1.0 credit from:		1.0
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2200 [0.5]	Global Connections	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
5. 1.0 credit in	GEOG and/or GEOM at the 2000- level or above	1.0
6. 2.5 credits in	GEOG and/or GEOM at the 3000- level or above	2.5
B. Credits Not Included in the Geography Major CGPA (8.0 credits)		
7. 6.0 credits in	electives not in GEOG	6.0
8. 2.0 credit in	free electives.	2.0
Total Credits		15.0

Course Categories for B.Sc. Geography

Lists of courses for all other categories (Science Continuation, Approved Experimental Science, Science Faculty Electives and Approved Arts or Social Sciences Electives) are located at the Academic Regulations for the B.Sc. page.

Earth Sciences and Physical Geography B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 1.0 credit in:	1.0
ERTH 1006 [0.5] Exploring Planet Earth	
GEOG 1010 [0.5] Global Environmental Systems	
2. 1.0 credit in:	1.0
GEOG 2013 [0.5] Weather and Water	
GEOG 2014 [0.5] The Earth's Surface	
3. 2.0 credits in:	2.0
ERTH 2102 [0.5] Mineralogy to Petrology	
ERTH 2104 [0.5] Igneous Systems, Geochemistry and Processes	
ERTH 2314 [0.5] Sedimentation and Stratigraphy	
ERTH 2406 [0.5] Geology and Map Interpretation	
4. 0.5 credit in:	0.5
ERTH 2802 [0.5] Field Geology I	
5. 1.5 credits in:	1.5
ERTH 3003 [0.5] Geochemistry and Geochronology	
ERTH 3405 [0.5] Geophysical Methods	
ERTH 3806 [0.5] Structural Geology	
6. 0.5 credit from:	0.5
ERTH 3205 [0.5] Physical Hydrogeology	
GEOG 3103 [0.5] Watershed Hydrology	
7. 1.0 credit in:	1.0
ERTH 2004 [0.5] Maps, Satellites and the Geospatial Revolution	
GEOG 3002 [0.5] Introduction to Remote Sensing	
8. 2.0 credits from:	2.0
GEOG 3003 [0.5] Quantitative Geography	
GEOG 3010 [0.5] Field Methods in Physical Geography	
GEOG 3102 [0.5] Geomorphology	
GEOG 3104 [0.5] Principles of Biogeography	
GEOG 3105 [0.5] Climate and Atmospheric Change	
GEOG 3106 [0.5] Aquatic Science and Management	
GEOG 3108 [0.5] Soil Properties	
9. 0.5 credit from:	0.5
ERTH 3203 [0.5] Sedimentology	
ERTH 3206 [0.5] Sedimentary Depositional Systems	
10. 1.0 credit in Science Geography or Geomatics courses at the 2000-level or above	1.0
11. 1.0 credit in Earth Sciences, Science Geography or Geomatics courses at the 4000-level	1.0
12. 1.0 credit from:	1.0
ERTH 4908 [1.0] Honours Thesis	
OR	
ERTH 4909 [0.5] Research in Earth Sciences and 0.5 credit in EARTH, GEOG or GEOM at the 4000-level	
OR	
GEOG 4005 [0.5] Directed Studies in Geography and 0.5 credit in EARTH, GEOG or GEOM at the 4000-level	
OR	
GEOG 4906 [1.0] Honours Research Project	
B. Credits Not Included in the Major CGPA (7.0 credits)	

13. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
14. 1.0 credit from:	1.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II	
15. 1.0 credit in:	1.0
PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II	
16. 0.5 credit from:	0.5
GEOG 2006 [0.5] Introduction to Quantitative Research	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
17. 0.5 credit in:	0.5
COMP 1005 [0.5] Introduction to Computer Science I	
18. 0.5 credit in approved electives (see list below)	0.5
19. 0.5 credit in:	0.5
NSCI 1000 [0.5] Seminar in Science (or approved course outside of the faculties of Science and Engineering and Design)	
20. 1.5 credits in approved courses outside of the faculties of Science and Engineering and Design	1.5
21. 0.5 credit in free elective	0.5
Total Credits	20.0

Approved Electives - B.Sc. Earth Sciences and Physical Geography

Biology

BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	

Computer Science

COMP 1006 [0.5] Introduction to Computer Science II	
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Chemistry

CHEM 2103 [0.5] Physical Chemistry I	
CHEM 2203 [0.5] Organic Chemistry I	
CHEM 2207 [0.5] Introduction to Organic Chemistry I	
CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry	

Mathematics

MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics	
MATH 2007 [0.5] Elementary Calculus II	
MATH 2107 [0.5] Linear Algebra II	

Physics

PHYS 2202 [0.5] Wave Motion and Optics	
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Statistics

STAT 2509 [0.5] Introduction to Statistical Modeling II	
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Physical Geography

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.0 credit from:	1.0
GEOG 1010 [0.5] Global Environmental Systems or EARTH 1006 [0.5] Exploring Planet Earth	
and	

GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
2. 1.0 credit in:		1.0
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
3. 0.5 credit from:		0.5
GEOG 2006 [0.5]	Introduction to Quantitative Research	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
4. 0.5 credit from:		0.5
GEOG 3000 [0.5]	Honours Field Course	
GEOG 3010 [0.5]	Field Methods in Physical Geography	
5. 2.5 credits from:		2.5
GEOG 3003 [0.5]	Quantitative Geography	
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
GEOG 3108 [0.5]	Soil Properties	
GEOM 3002 [0.5]	Introduction to Remote Sensing	
6. 1.5 credits from:		1.5
GEOG 3000 [0.5]	Honours Field Course	
GEOG 3003 [0.5]	Quantitative Geography	
GEOG 3010 [0.5]	Field Methods in Physical Geography	
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3108 [0.5]	Soil Properties	
GEOG 4000 [0.5]	Field Studies	
GEOG 4005 [0.5]	Directed Studies in Geography	
GEOG 4013 [0.5]	Cold Region Hydrology	
GEOG 4017 [0.5]	Global Biogeochemical Cycles	
GEOG 4101 [0.5]	Two Million Years of Environmental Change	
GEOG 4103 [0.5]	Water Resources Engineering	
GEOG 4104 [0.5]	Microclimatology	
GEOG 4108 [0.5]	Permafrost	
7. 2.0 credits from:		2.0
GEOM at the 4000 level or		
GEOG 4000 [0.5]	Field Studies	
GEOG 4004 [0.5]	Environmental Impact Assessment	
GEOG 4005 [0.5]	Directed Studies in Geography	
GEOG 4013 [0.5]	Cold Region Hydrology	
GEOG 4017 [0.5]	Global Biogeochemical Cycles	
GEOG 4101 [0.5]	Two Million Years of Environmental Change	
GEOG 4103 [0.5]	Water Resources Engineering	
GEOG 4104 [0.5]	Microclimatology	
GEOG 4108 [0.5]	Permafrost	
GEOG 4406 [0.5]	Practicum I	
GEOG 4408 [0.5]	Practicum II	
8. 1.0 credit in:		1.0
GEOG 4906 [1.0]	Honours Research Project	

B. Credits Not Included in the Major CGPA (10.0 credits)		
9. 1.0 credit in	Experimental Science Electives	1.0
10. 0.5 credit in:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
11. 0.5 credit in	MATH or COMP	0.5
12. 2.0 credits in	Science Continuation, not in GEOG	2.0
13. 1.0 credits in	Science Faculty Electives	1.0
14. 0.5 credit from:		0.5
NSCI 1000 [0.5]	Seminar in Science (or approved courses outside the faculties of Science and Engineering and Design)	
15. 1.0 credit in	approved courses outside the faculties of Science and Engineering and Design, not in GEOG	1.0
16. 0.5 credit in	approved courses outside the faculties of Science and Engineering and Design	0.5
17. 3.0 credits in	free electives.	3.0
Total Credits		20.0

Specialization in Globalization and the Environment

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)		
1. 4.5 credits in:		4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in:	International Experience Requirement Preparation	
GINS 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in:	the Specialization	
a. 0.5 credit from:	Foundations I	0.5
ENST 1000 [0.5]	Introduction to Environmental Studies	
OR		
GEOG 1020/ ENST 1020 [0.5]	People, Places and Environments	
b. 1.0 credit in:	Foundations II	1.0
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 2200 [0.5]	Global Connections	
c. 1.5 credits from:	Globalization	1.5
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3024 [0.5]	Understanding Globalization	
GEOG 3025 [0.5]	Geographies of Selected Regions	

GEOG 3030 [0.5]	Regional Field Excursion	
GEOG 3404 [0.5]	Geographies of Economic Development	
d. 2.0 credits from: Global Environment		2.0
ANTH 3355 [0.5]	Anthropology and the Environment	
GEOG 2500/ ENST 2500 [0.5]	Climate Change: Social Science Perspectives	
GEOG 3022/ ENST 3022 [0.5]	Environmental and Natural Resources	
GEOG 3206 [0.5]	Health, Environment, and Society	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
HUMR 3503 [0.5]	Global Environmental Justice	
PSCI 3801 [0.5]	Environmental Politics	
TSES 3002 [0.5]	Energy and Sustainability	
e. 1.0 credit in: Research Methodologies		1.0
GEOG 2005/ ENST 2005 [0.5]	Introduction to Qualitative Research	
GEOG 2006/ ENST 2006 [0.5]	Introduction to Quantitative Research	
f. 1.5 credits from: Honours Seminars		1.5
GEOG 4005/ ENST 4005 [0.5]	Directed Studies in Geography (topic in Global Environmental Issues)	
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change	
GEOG 4023 [0.5]	Seminar in Special Topics on the City	
GEOG 4024 [0.5]	Seminar in Globalization	
GEOG 4909 [1.0]	Honours Research Thesis (topic in Globalization and the Environment)	
PSCI 4808 [0.5]	Global Environmental Politics	
B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in: free electives		8.0
C. Additional Requirements		
5. The International Experience requirement must be met.		
6. The Language requirement must be met.		
Total Credits		20.0

Stream in Globalization and the Environment B.G. In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)		
1. 4.0 credits in: Core Courses		4.0
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream		4.0
a. Foundations		
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 1020/ ENST 1020 [0.5]	People, Places and Environments	

GEOG 2200 [0.5]	Global Connections	
b. Globalization		
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3024 [0.5]	Understanding Globalization	
GEOG 3025 [0.5]	Geographies of Selected Regions	
GEOG 3404 [0.5]	Geographies of Economic Development	
c. Global Environment		
ANTH 3355 [0.5]	Anthropology and the Environment	
GEOG 2500/ ENST 2500 [0.5]	Climate Change: Social Science Perspectives	
GEOG 3022/ ENST 3022 [0.5]	Environmental and Natural Resources	
GEOG 3206 [0.5]	Health, Environment, and Society	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
HUMR 3503 [0.5]	Global Environmental Justice	
PSCI 3801 [0.5]	Environmental Politics	
TSES 3002 [0.5]	Energy and Sustainability	
d. Research Methodologies		
GEOG 2005/ ENST 2005 [0.5]	Introduction to Qualitative Research	
GEOG 2006/ ENST 2006 [0.5]	Introduction to Quantitative Research	

B. Credits Not Included in the Major CGPA (7.0 credits):

3. 7.0 credits in: Free Electives	7.0
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C. Additional Requirements

4. The Language requirement must be met.

Total Credits	15.0
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Minor in Geography (4.0 credits)

Open to all undergraduate degree students not in Geography programs or the B.G.In.S. Specialization or Stream in Globalization and the Environment.

Requirements:

1. 1.0 credit in:		1.0
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 1020 [0.5]	People, Places and Environments	
2. 0.5 credit from:		0.5
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
GEOG 2020 [0.5]	Ecosystems of Canada	
3. 0.5 credit from:		0.5
GEOG 2005 [0.5]	Introduction to Qualitative Research	
GEOG 2006 [0.5]	Introduction to Quantitative Research	
GEOG 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
4. 0.5 credit from:		0.5
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2200 [0.5]	Global Connections	
GEOG 2300 [0.5]	Space, Place and Culture	

GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	
5. 1.0 credit in	GEOG and/or GEOM at the 3000-level or above	1.0
6. 0.5 credit in	GEOG or GEOM	0.5
7. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Minor in Physical Geography (4.0 credits)

Open to all undergraduate degree students not in Geography programs.

Requirements:

1. 0.5 credit from:		0.5
GEOG 1010 [0.5]	Global Environmental Systems	
ERTH 1006 [0.5]	Exploring Planet Earth	
2. 1.0 credit in:		1.0
GEOG 2013 [0.5]	Weather and Water	
GEOG 2014 [0.5]	The Earth's Surface	
3. 2.5 credits from:		2.5
GEOM 3002 [0.5]	Introduction to Remote Sensing	
GEOG 3003 [0.5]	Quantitative Geography	
GEOG 3102 [0.5]	Geomorphology	
GEOG 3103 [0.5]	Watershed Hydrology	
GEOG 3104 [0.5]	Principles of Biogeography	
GEOG 3105 [0.5]	Climate and Atmospheric Change	
GEOG 3106 [0.5]	Aquatic Science and Management	
GEOG 3108 [0.5]	Soil Properties	
GEOG 4013 [0.5]	Cold Region Hydrology	
GEOG 4017 [0.5]	Global Biogeochemical Cycles	
GEOG 4101 [0.5]	Two Million Years of Environmental Change	
GEOG 4104 [0.5]	Microclimatology	
GEOG 4108 [0.5]	Permafrost	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Minor in Urban Studies (4.0 credits)

Only students pursuing an undergraduate program (except the BA Honours in Geography with a Concentration in Urban Geography) requiring at least 20.0 credits to graduate may be admitted to the Urban Studies minor.

Requirements:

1. 1.0 credit from:		1.0
FYSM 1107 [1.0]	Social Justice and the City	
GEOG 1020 [0.5]	People, Places and Environments	
GEOG 1023 [0.5]	Introduction to Cities and Urbanization	
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution	
2. 1.0 credit from:		1.0
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2200 [0.5]	Global Connections	
GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons	
3. 0.5 credit in:		0.5
GEOG 3023 [0.5]	Cities in a Global World	

4. 0.5 credit from:		0.5
AFRI 3004 [0.5]	The African City	
ARCU 3100 [0.5]	The Morphology of the City	
HIST 3209 [0.5]	Canadian Urban History	
HUMR 3002 [0.5]	Right to the City	
5. 0.5 credit from:		0.5
GEOG 4023 [0.5]	Seminar in Special Topics on the City	
GEOG 4323 [0.5]	Urban and Regional Planning	
6. 0.5 credit from:		0.5
ARCH 4201 [0.5]	History of Modern Housing	
ARCU 4103 [0.5]	Cities	
ARCU 4300 [0.5]	Theories of Urbanism	
ARCU 4600 [0.5]	Post-WWII Urbanism	
ARCU 4700 [0.5]	Urban Utopias	
ARCU 4801 [0.5]	Topics in Urbanism	
GEOG 4000 [0.5]	Field Studies (when offered with an urban theme)	
GEOG 4005 [0.5]	Directed Studies in Geography (with urban theme)	
GEOG 4007 [0.5]	Special Topics in Geography and Environmental Studies	
INDG 4001 [0.5]	Indigeneity in the City	
7. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public

Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and

B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology
Chemistry	
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II

CHEM 2800 [0.5] Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5] Exploring Planet Earth

ERTH 1009 [0.5] The Earth System Through Time

ERTH 2102 [0.5] Mineralogy to Petrology

ERTH 2404 [0.5] Engineering Geoscience

ERTH 2802 [0.5] Field Geology I

ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds

ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians

ERTH 3204 [0.5] Mineral Deposits

ERTH 3205 [0.5] Physical Hydrogeology

ERTH 3806 [0.5] Structural Geology

Food Sciences

FOOD 3001 [0.5] Food Chemistry

FOOD 3002 [0.5] Food Analysis

FOOD 3005 [0.5] Food Microbiology

Geography

GEOG 1010 [0.5] Global Environmental Systems

GEOG 3108 [0.5] Soil Properties

Neuroscience

NEUR 3206 [0.5] Sensory and Motor Neuroscience

NEUR 3207 [0.5] Systems Neuroscience

NEUR 4600 [0.5] Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5] Foundations of Physics I

PHYS 1002 [0.5] Foundations of Physics II

PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics

PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

PHYS 1007 [0.5] Elementary University Physics I

PHYS 1008 [0.5] Elementary University Physics II

PHYS 2202 [0.5] Wave Motion and Optics

PHYS 2604 [0.5] Modern Physics I

PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars

PHYS 3606 [0.5] Modern Physics II

PHYS 3608 [0.5] Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5] Global Environmental Systems

GEOG 2006 [0.5] Introduction to Quantitative Research

GEOG 2013 [0.5] Weather and Water

GEOG 2014 [0.5] The Earth's Surface

GEOG 3003 [0.5] Quantitative Geography

GEOG 3010 [0.5] Field Methods in Physical Geography

GEOG 3102 [0.5] Geomorphology

GEOG 3103 [0.5] Watershed Hydrology

GEOG 3104 [0.5] Principles of Biogeography

GEOG 3105 [0.5] Climate and Atmospheric Change

GEOG 3106 [0.5] Aquatic Science and Management

GEOG 3108 [0.5] Soil Properties

GEOG 4000 [0.5] Field Studies

GEOG 4005 [0.5] Directed Studies in Geography

GEOG 4013 [0.5] Cold Region Hydrology

GEOG 4017 [0.5] Global Biogeochemical Cycles

GEOG 4101 [0.5] Two Million Years of Environmental Change

GEOG 4103 [0.5] Water Resources Engineering

GEOG 4104 [0.5] Microclimatology

GEOG 4108 [0.5] Permafrost

Science Psychology Courses

PSYC 2001 [0.5] Introduction to Research Methods in Psychology

PSYC 2002 [0.5] Introduction to Statistics in Psychology

PSYC 2700 [0.5] Introduction to Cognitive Psychology

PSYC 3000 [1.0] Design and Analysis in Psychological Research

PSYC 3506 [0.5] Cognitive Development

PSYC 3700 [1.0] Cognition (Honours Seminar)

PSYC 3702 [0.5] Perception

PSYC 2307 [0.5] Human Neuropsychology I

PSYC 3307 [0.5] Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body

CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment

MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified

course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Geography, Geography with Concentration in Physical Geography, B.Sc. Honours Physical Geography: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, or B.Sc. Honours Physical Geography;
2. Obtained and maintained an overall minimum CGPA of 9.50 and a minimum major CGPA of 9.50;
3. Have obtained third-year standing;
4. Successfully completed, by the start date of the first work term:
 - a. BA Geography students: GEOG 2005 and GEOG 2006. B.Sc. Geography students: GEOG 2006.
 - b. the required field course in their program (GEOG 3000, GEOG 3010, or GEOG 3030)
5. Be registered as a full-time student.

B.A. Honours Geography, Geography with a Concentration in Physical Geography, Geography with a Concentration in Urban Geography, B.Sc. Honours Physical Geography students must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op work term course: GEOG 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may

use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for

admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Geography (GEOG) Courses

4000-level courses are normally restricted to students with fourth-year Honours standing. However, students with third-year standing may take 4000-level courses provided

they have the necessary prerequisites, a Geography CGPA of 6.50 or better, and permission of the Department.

GEOG 1010 [0.5 credit]

Global Environmental Systems

Principles, processes and interactions in the Earth's environment emphasizing the flow of energy and matter within global systems. Atmospheric and oceanic processes, earth surface processes and biogeochemical cycling. Case studies on the interaction between human activity and the natural environment.
Includes: Experiential Learning Activity
Lectures three hours a week, laboratory two hours a week.

GEOG 1020 [0.5 credit]

People, Places and Environments

Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place.
Includes: Experiential Learning Activity
Also listed as ENST 1020.
Lectures two hours a week and tutorial one hour a week.

GEOG 1023 [0.5 credit]

Introduction to Cities and Urbanization

Introduction to the study of cities, urbanization and suburbanization. Geography of urban experience, development and change across an urbanizing planet. Urbanization processes, patterns and issues in different cities and regions; the relationships among urban areas.
Includes: Experiential Learning Activity
Precludes additional credit for GEOG 2400 (no longer offered).
Lectures two hours per week and tutorials one hour per week.

GEOG 2005 [0.5 credit]

Introduction to Qualitative Research

Introduction to the research process, from generating questions to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities.
Includes: Experiential Learning Activity
Also listed as ENST 2005.
Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.
Lectures two hours a week, workshop two hours a week.

GEOG 2006 [0.5 credit]**Introduction to Quantitative Research**

Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis.

Includes: Experiential Learning Activity

Also listed as ENST 2006.

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606.

Lectures two hours a week, laboratory two hours a week.

GEOG 2013 [0.5 credit]**Weather and Water**

Introduction to climate, weather and the hydrological cycle. Physical properties of the atmosphere, radiation and energy balances, global circulation, atmospheric moisture and precipitation, weather systems and forecasting, mechanisms of climate change.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 1010 or EARTH 1006 or ISCI 1001.

Lectures three hours a week, laboratory three hours a week.

GEOG 2014 [0.5 credit]**The Earth's Surface**

Introduction to geomorphology. Weathering, slope and fluvial processes within drainage basins, and glacial and periglacial processes.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 1010 or EARTH 1006 or ISCI 1001.

Lectures three hours a week, laboratory three hours a week.

GEOG 2020 [0.5 credit]**Ecosystems of Canada**

Introduction to world biomes and in-depth analysis of the distribution and development of Canada's major ecosystems including the boreal forest, temperate forest, tundra, grasslands, wetlands, and aquatic environments; Current issues in ecosystem science and conservation such as agricultural management, forestry and urban ecology.

Prerequisite(s): GEOG 1010 or EARTH 1006 or EARTH 1010 or ISCI 1001.

Lectures three hours a week.

GEOG 2023 [0.5 credit]**Cities, Inequality and Urban Change**

Geographical perspectives on the uneven power relationships and politics that shape urban lives and urban space. Key topics may include housing and segregation, planning for sustainable cities, urban social movements, urban inequality and changing livelihoods.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 2400 (no longer offered).

Prerequisite(s): GEOG 1023, or second-year standing, or permission of the department.

Lectures two hours per week and tutorials one hour per week.

GEOG 2200 [0.5 credit]**Global Connections**

Globalization and global environmental change as linked processes. Geographical analysis of economic, cultural and political transformations acting at global, national and local scales. Choices and constraints underlying economic, social and environmental sustainability.

Prerequisite(s): second-year standing or permission of the Department.

Lectures three hours a week.

GEOG 2300 [0.5 credit]**Space, Place and Culture**

Introduction to social and cultural geography, including how theories of space, place, landscape, power, and knowledge can be used to understand the geographic dimensions of social and cultural life. Topics include culture and identity, migration and transnationalism, nature, gender, sexuality, race, colonialism, consumption, and work.

Prerequisite(s): second-year standing or permission of the Department.

Lectures two hours a week, discussion one hour a week.

GEOG 2500 [0.5 credit]**Climate Change: Social Science Perspectives**

An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change.

Includes: Experiential Learning Activity

Also listed as ENST 2500.

Prerequisite(s): second-year standing or permission of the Department.

Lectures two hours a week, discussion groups one hour a week.

GEOG 2600 [0.5 credit]**Geography Behind the Headlines**

Exploration of the geographical backgrounds to selected issues of current public interest, through geography's perspective of integrating human and physical environments. Issues selected will be structured from the global through the national/regional to the local, identifying the interdependencies among the scales.

Lecture three hours a week.

GEOG 3000 [0.5 credit]**Honours Field Course**

Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year.

Includes: Experiential Learning Activity

Also listed as ENST 3900.

Precludes additional credit for ENST 2900 (no longer offered).

Prerequisite(s): GEOG 2005/ENST 2005 and GEOG 2006/ENST 2006, third-year Honours standing in Geography, Geomatics or Environmental Studies, or permission of the Department.

Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply.

Consult the department regarding course details.

GEOG 3001 [0.5 credit]**Doing Qualitative Research**

Theory and methods used in qualitative approaches to research in human geography; hands-on experience and discussion of beliefs and claims underlying scholarly work. Ethical and practical dilemmas confronting researchers.

Gathering and interpreting qualitative information; representing knowledge.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2005 or ENST 2005.

Lecture and discussion three hours per week.

GEOG 3003 [0.5 credit]**Quantitative Geography**

Quantitative methods used in geographical research: multiple correlation and regression, principal component/factor analysis, spatial statistics, cluster analysis, and a review of other selected techniques. Computer-based analysis.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 or permission of the Department.

Lecture two hours a week, laboratory two hours a week.

GEOG 3009 [0.5 credit]**Special Topics in Human Geography**

Selected topics concerning human geography not usually included in regular course offerings. Topic varies from year to year. Students should check with the Department for more information.

Precludes additional credit for GEOG 2505 (no longer offered).

Prerequisite(s): GEOG 1020 or ENST 1020 and third-year standing, or permission of the Department.

Lecture three hours per week.

GEOG 3010 [0.5 credit]**Field Methods in Physical Geography**

Field and laboratory approaches, methodologies and techniques in physical geography. Field projects will be undertaken to collect data for analysis, evaluation and presentation.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 and GEOG 2013 or GEOG 2014 or permission of the Department.

Normally consists of a multi-day field camp, including lodging, during Fall or Winter Break, and regular classroom meetings. A supplementary charge will apply.

GEOG 3021 [0.5 credit]**Geographies of Culture and Identity**

Examination of culture, identity and place over time. Colonial and other historical processes that have shaped societies from place to place; relationships between cultural groups and their natural surroundings; gender, ethnicity, nationality and other dimensions of identity; impacts of globalization.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2300 and third-year standing, or permission of the Department.

Lecture three hours a week.

GEOG 3022 [0.5 credit]**Environmental and Natural Resources**

Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources.

Includes: Experiential Learning Activity

Also listed as ENST 3022.

Prerequisite(s): third-year standing in Geography or Environmental Studies or BGIInS Specialization/Stream in Globalization and Environment or permission of the Department.

Lecture three hours a week.

GEOG 3023 [0.5 credit]**Cities in a Global World**

Introduces the study of cities as "systems of cities", the political economy of linkages between urban places located unevenly in space, and "cities as systems". Case studies of socio-cultural, political and economic relations within biophysical and built environments.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2023 and third-year standing, or permission of the department.

Lecture and discussion three hours a week.

GEOG 3024 [0.5 credit]**Understanding Globalization**

Geographical analysis of processes of globalization: theoretical frameworks, historical context and contemporary challenges.

Prerequisite(s): GEOG 2200 and third-year standing, or permission of the Department.

Lecture three hours a week.

GEOG 3025 [0.5 credit]**Geographies of Selected Regions**

Geographical analysis of key questions facing a selected region of the world. Attention will focus on selected topics within one or more regions and their related global context.

Prerequisite(s): third-year standing in a B.A. program or BGIInS Specialization/Stream in Globalization and Environment or permission of the Department.

Lecture three hours a week.

GEOG 3026 [0.5 credit]**Topics in the Geography of Canada**

Selected topic concerning the geography of Canada. Topic varies from year to year.

Precludes additional credit for GEOG 2505 [no longer offered].

Prerequisite(s): GEOG 1020 or ENST 1020 and second-year standing, or permission of the Department.

Lecture three hours a week.

GEOG 3030 [0.5 credit]**Regional Field Excursion**

Guided and independent geographic field research, with a focus on data collection methods, and analysis and presentation of findings. Consists of an excursion outside of the Ottawa region. A supplementary charge may apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year Honours standing in Geography or BGIInS Specialization in Globalization and Environment or permission of the Department.

A seven- to ten-day field excursion.

GEOG 3102 [0.5 credit]**Geomorphology**

Geomorphological agents of landscape change at the Earth's surface, emphasizing the role of water, ice and wind in erosion and deposition; use of geomorphic indicators in studies of environmental change. A supplementary charge may apply.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2014 and third-year standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week, one field excursion.

GEOG 3103 [0.5 credit]**Watershed Hydrology**

Principles of hydrology at local and watershed scales, emphasizing: soil moisture regimes; field data collection and analysis of surface water or snow and ice conditions; hydrologic processes in cold environments; and regional runoff regimes in Canada.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2013 or permission of the Department.

Lectures three hours a week, laboratory two hours a week.

GEOG 3104 [0.5 credit]**Principles of Biogeography**

Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.

Includes: Experiential Learning Activity

Also listed as BIOL 3608.

Prerequisite(s): GEOG 1010 or BIOL 2600, or permission of the Department.

Lectures, laboratory, and fieldwork five hours a week.

GEOG 3105 [0.5 credit]**Climate and Atmospheric Change**

The global climate system, with emphasis on global change variability over the historical and modern periods; the changing composition of the atmosphere and its impact on climate; analysis and interpretation of climatic and atmospheric data; modeling of climate systems.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2013 or permission of the Department.

Lecture two hours a week, laboratory two hours a week.

GEOG 3106 [0.5 credit]**Aquatic Science and Management**

Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation.

Includes: Experiential Learning Activity

Also listed as ENSC 3106.

Prerequisite(s): third-year standing and a second-year science or engineering course.

Workshop four hours per week.

GEOG 3108 [0.5 credit]**Soil Properties**

The physical and chemical properties of soils; soil-water relationships, weathering processes, soil mineralogy, cation exchange, soil pH. A plant-oriented perspective predominates.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2013 or GEOG 2014 or permission of the Department.

Lectures and laboratory five hours a week.

GEOG 3206 [0.5 credit]**Health, Environment, and Society**

Factors influencing human health in an ecological framework involving population structure, habitat, and behaviour. Changes in the distribution of communicable and degenerative diseases are portrayed as being related to historical and contemporary development and globalization processes. Sources, types and characteristics of geographically referenced health information.

Prerequisite(s): third-year standing.

Lectures three hours a week.

GEOG 3209 [0.5 credit]**Sustainability and Environment in the South**

Analysis of the relationships between people and environment in selected regions in the South (Africa, Asia, Latin America). Emphasis on sustainable livelihoods and local action in relation to broader socio-economic and political processes. Regions selected vary from year to year.

Prerequisite(s): third-year standing and ENST 2000 or ENST 2001 or GEOG 2200 or GEOG 2300 or permission of the Department.

Lecture and discussion three hours a week.

GEOG 3404 [0.5 credit]**Geographies of Economic Development**

Geographical approaches to economic development and difference at local, regional and global scales. Critical historical, cultural, social and political economic perspectives on 'development', including theories of the state, colonial power, and development institutions. Spatial dynamics and environmental impacts of economic activity.

Prerequisite(s): GEOG 2200 or permission of the Department.

Lectures three hours a week.

GEOG 3501 [0.5 credit]**Geographies of the Canadian North**

The physical characteristics, historical geography, economic resources, settlement patterns and problems and the future development of Arctic and Subarctic lands, focusing primarily on Canada.

Prerequisite(s): third-year standing or permission of the Department.

Lectures three hours a week.

GEOG 3700 [0.5 credit]**Population Geography**

The distributional aspects of population attributes; areal patterns of population characteristics and their spatial variations associated with differences in the nature of places; migratory movements within the framework of spatial models of interactions between locations.

Prerequisite(s): GEOG 2200 or GEOG 2300, or permission of the Department.

Lectures three hours a week.

GEOG 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

GEOG 4000 [0.5 credit]**Field Studies**

Field observation and methodology in a selected region; individual or group basis.

Includes: Experiential Learning Activity

Also listed as ENST 4400.

Prerequisite(s): third-year Honours standing and permission of the Department.

Hours to be arranged.

GEOG 4004 [0.5 credit]**Environmental Impact Assessment**

Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.

Includes: Experiential Learning Activity

Also listed as ENST 4004.

Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.

Lectures and seminars three hours a week.

GEOG 4005 [0.5 credit]**Directed Studies in Geography**

Students pursue their interest in a selected theme in geography on a tutorial basis with a member of the Department.

Prerequisite(s): permission of the Department.

GEOG 4007 [0.5 credit]**Special Topics in Geography and Environmental Studies**

Selected topics in geography and/or environmental studies.

Also listed as ENST 4007.

Precludes additional credit for GEOG 4006.

Prerequisite(s): fourth-year Honours standing in the Department or permission of the Department.

Seminar three hours per week.

GEOG 4013 [0.5 credit]**Cold Region Hydrology**

An examination of cold region hydrologic processes via experimental and observational studies; analysis of hydrologic data and application of hydrologic models.

Prerequisite(s): GEOG 3103.

Lecture three hours a week.

GEOG 4017 [0.5 credit]**Global Biogeochemical Cycles**

Processes that control the fluxes and reservoirs of biologically active chemical constituents on land, in the atmosphere, and in the oceans. Interactions between biogeochemical cycles and the Earth's climate; impact of land use and fossil fuel emissions on biogeochemical cycles and global change.

Prerequisite(s): GEOG 3108 or permission of the Department.

Lectures three hours a week.

GEOG 4021 [0.5 credit]**Seminar in Culture, Identity and Place**

Selected topic or field of inquiry concerning the geographic dimensions of culture, identity and place.

Prerequisite(s): GEOG 3021 and fourth-year Honours standing in Geography or permission of the Department.

Seminar three hours a week.

GEOG 4022 [0.5 credit]**Seminar in People, Resources and Environmental Change**

A selected topic or field of inquiry concerning natural resource use and environmental change.

Also listed as ENST 4022.

Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or BGIInS Specialization in Globalization and Environment or permission of the Department.

Seminar three hours a week.

GEOG 4023 [0.5 credit]**Seminar in Special Topics on the City**

A selected topic or field of inquiry concerning urban geography.

Prerequisite(s): GEOG 3023 and fourth-year Honours standing in Geography or Environmental Studies or BGIInS Specialization in Globalization and Environment or permission of the Department.

Seminar three hours per week.

GEOG 4024 [0.5 credit]**Seminar in Globalization**

A selected issue or topic related to globalization.

Prerequisite(s): GEOG 3024 and fourth-year Honours standing in Geography or BGIInS Specialization in Globalization and Environment or permission of the Department.

Seminar three hours week.

GEOG 4040 [0.5 credit]**Geographic Thought**

Major intellectual issues and debates in the development of contemporary human geography, including history of geographic thought, geographic responses to social and political movements and debates, and geographic engagement with contemporary critical theory.

Prerequisite(s): fourth-year Honours standing in Geography or permission of the Department.

Seminar three hours per week.

GEOG 4050 [0.5 credit]**Environmental and Geographic Education**

Selected theoretical and applied issues concerning environmental and geographic education.

Also listed as ENST 4050.

Prerequisite(s): third-year Honours standing in Geography or Environmental Studies, or permission of the Department.

Seminar three hours per week.

GEOG 4101 [0.5 credit]**Two Million Years of Environmental Change**

Multidisciplinary scientific study of the changes in the physical environment of the Earth during the last two million years and methods of studying recent Earth history, with focus on current research.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in a B.Sc. program, or a third year Science Geography Elective or a third year EARTH course, or permission of the Department. Note:

GEOG 3105 is recommended.

Lectures three hours a week.

GEOG 4103 [0.5 credit]**Water Resources Engineering**

A quantitative analysis of natural water systems and the development of these systems as a resource.

Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Availability of groundwater. Storm water management.

Also listed as ENVE 3003.

Prerequisite(s): permission of the Department.

Recommended background: MAAE 2300.

Lectures three hours a week, problem analysis one hour a week.

GEOG 4104 [0.5 credit]**Microclimatology**

The formation of microclimates near the Earth's surface; energy and water flows; the interaction of atmospheric processes with the physical properties of surfaces.

Prerequisite(s): GEOG 2013 or permission of the Department.

Lectures three hours a week.

GEOG 4108 [0.5 credit]**Permafrost**

Distribution, development, and degradation of permafrost in Canada; thermal and hydrologic regime of permafrost terrain; development of landforms in permafrost regions; geotechnical consideration in northern construction.

Prerequisite(s): GEOG 3108 or permission of the Department.

Lectures three hours a week.

GEOG 4304 [0.5 credit]**Transportation Engineering and Planning**

Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion; human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods.

Also listed as CIVE 3304.

Prerequisite(s): third-year standing, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

GEOG 4323 [0.5 credit]**Urban and Regional Planning**

History, theories, and practice of urban planning, as well as the policies, plans, and programs developed and implemented in diverse communities. Course topics may include the integration of community development and social planning, urban design, transportation and infrastructure, and environmental management.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 3023 and fourth-year standing in Geography or Environmental Studies, or permission of the department.

Lectures three hours per week.

GEOG 4406 [0.5 credit]**Practicum I**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOM 4406.

Prerequisite(s): fourth-year Honours standing in Geography or Geomatics and permission of the Department.

Field placement one day a week.

GEOG 4408 [0.5 credit]**Practicum II**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOM 4408.

Prerequisite(s): fourth-year Honours standing in Geography or Geomatics and permission of the Department.

Field placement of one day a week.

GEOG 4450 [0.5 credit]**Community-Engaged Research**

Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year.

Includes: Experiential Learning Activity

Also listed as ENST 4450.

Prerequisite(s): fourth-year standing, or permission of the department.

Lectures, discussion and project work three hours a week.

GEOG 4906 [1.0 credit]**Honours Research Project**

A research project based on a modeling, laboratory or field problem. The project is supervised by a member of the department and a written thesis and poster must be submitted.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOM 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in B.Sc. Geography, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOG 4909 [1.0 credit]**Honours Research Thesis**

Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906, GEOM 4906, GEOM 4909, ENST 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in B.A. Geography or B.Globalization and International Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

Geomatics

This section presents the requirements for programs in:

- Geomatics B.A. Honours
- Geomatics B.Sc. Honours
- Minor in Geomatics

Program Requirements**Course Categories for B.Sc. Geomatics**

See Academic Regulations for the Bachelor of Science Degree for a list of courses in these categories.

- Science Continuation
- Experimental Science Electives
- Science Faculty Electives

- Approved Courses Outside the Faculties of Science and Engineering and Design
- Science Geography courses

Geomatics

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.0 credit in:	1.0
GEOG 1010 [0.5] Global Environmental Systems	
GEOG 1020 [0.5] People, Places and Environments	
2. 2.5 credits in:	2.5
GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution	
GEOM 2005 [0.5] Introduction to Geospatial Programming	
GEOM 2006 [0.5] Introduction to Quantitative Research	
or STAT 2507 [0.5] Introduction to Statistical Modeling I	
GEOM 2007 [0.5] Vector GIS: Points, Lines and Polygons	
GEOM 2008 [0.5] Raster GIS: Pixels and Grids	
3. 2.5 credits in:	2.5
GEOM 3000 [0.5] Honours Field Course	
or GEOG 3010 [0.5] Field Methods in Physical Geography	
GEOM 3002 [0.5] Introduction to Remote Sensing	
GEOM 3003 [0.5] Quantitative Geography	
GEOM 3005 [0.5] Geospatial Analysis	
GEOM 3007 [0.5] Cartographic Theory and Design	
4. 1.5 credits from:	1.5
GEOM 4001 [0.5] Special Topics in Geomatics	
GEOM 4003 [0.5] Remote Sensing of the Environment	
GEOM 4005 [0.5] Directed Studies in Geomatics	
GEOM 4008 [0.5] Advanced Topics in Geographic Information Systems	
GEOM 4009 [0.5] Custom Geomatics Applications	
5. 0.5 credit in:	0.5
a) Co-op students must complete:	
0.5 cr in GEOG or GEOM at 4000-level, excluding GEOG 4406, GEOG 4408, GEOM 4406, GEOM 4408	
b) All other students must complete:	
GEOM 4406 [0.5] Practicum I (with placement in a Geomatics-related setting)	
6. 1.0 credit in GEOG at the 2000-level or higher	1.0
7. 1.0 credit from:	1.0
a) Thesis pathway	
GEOM 4909 [1.0] Honours Research Thesis	
or	
b) Course pathway	
1.0 credit in GEOM or GEOG at the 4000-level	
B. Credits not included in the Major CGPA (10.0 credits)	
8. 8.0 credits in electives not in Geomatics	8.0
9. 2.0 credits in free electives.	2.0
Total Credits	20.0

Geomatics

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 0.5 credit from:	0.5
GEOG 1010 [0.5] Global Environmental Systems	
ERTH 1006 [0.5] Exploring Planet Earth	
2. 3.5 credits in:	3.5
GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution	
GEOG 2013 [0.5] Weather and Water	
GEOM 2005 [0.5] Introduction to Geospatial Programming	
GEOM 2006 [0.5] Introduction to Quantitative Research	
or STAT 2507 [0.5] Introduction to Statistical Modeling I	
GEOM 2007 [0.5] Vector GIS: Points, Lines and Polygons	
GEOM 2008 [0.5] Raster GIS: Pixels and Grids	
CIVE 2004 [0.5] GIS, Surveying, CAD and BIM	
3. 2.5 credits in:	2.5
GEOM 3000 [0.5] Honours Field Course	
or GEOG 3010 [0.5] Field Methods in Physical Geography	
GEOM 3002 [0.5] Introduction to Remote Sensing	
GEOM 3003 [0.5] Quantitative Geography	
GEOM 3005 [0.5] Geospatial Analysis	
GEOM 3007 [0.5] Cartographic Theory and Design	
4. 1.5 credits from:	1.5
GEOM 4001 [0.5] Special Topics in Geomatics	
GEOM 4003 [0.5] Remote Sensing of the Environment	
GEOM 4005 [0.5] Directed Studies in Geomatics	
GEOM 4008 [0.5] Advanced Topics in Geographic Information Systems	
GEOM 4009 [0.5] Custom Geomatics Applications	
5. 0.5 credit in:	0.5
a) Co-op students must complete:	
0.5 cr in GEOM or GEOG at 4000-level, excluding GEOG 4406, GEOG 4408, GEOM 4406, GEOM 4408	
b) All other students must complete:	
GEOM 4406 [0.5] Practicum I	
6. 1.0 credits in GEOG at the 2000-level or higher	1.0
7. 1.0 credit in:	1.0
GEOM 4906 [1.0] Honours Research Project	
B. Credits Not Included in the Major CGPA (9.5 credits)	
8. 1.0 credit in Experimental Science Electives	1.0
9. 1.0 credits in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
10. 1.0 approved credits in Computer Science	1.0
11. 2.0 credits in Science Continuation not in GEOM	2.0
12. 1.0 credit in Science Faculty Electives	1.0
13. 0.5 credit in:	0.5
NSCI 1000 [0.5] Seminar in Science (or approved courses outside the faculties outside the faculties of Science and Engineering and Design)	
14. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design	1.5

15. 1.5 credits in free electives 1.5

Total Credits 20.0

Minor in Geomatics (4.0 credits)

Only students pursuing undergraduate programs requiring at least 20.0 credits to graduate may be admitted to the minor in Geomatics.

Requirements

1. 0.5 credit in: 0.5

GEOM 1004 [0.5] Maps, Satellites and the Geospatial Revolution

2. 1.0 credit from: 1.0

GEOM 2005 [0.5] Introduction to Geospatial Programming

GEOM 2007 [0.5] Vector GIS: Points, Lines and Polygons

GEOM 2008 [0.5] Raster GIS: Pixels and Grids

3. 0.5 credit from: 0.5

GEOG 2006 [0.5] Introduction to Quantitative Research

STAT 2507 [0.5] Introduction to Statistical Modeling I

4. 1.5 credits from: 1.5

GEOM 3002 [0.5] Introduction to Remote Sensing

GEOG 3003 [0.5] Quantitative Geography

GEOM 3005 [0.5] Geospatial Analysis

GEOM 3007 [0.5] Cartographic Theory and Design

5. 0.5 credit from: 0.5

GEOM 4001 [0.5] Special Topics in Geomatics

GEOM 4003 [0.5] Remote Sensing of the Environment

GEOM 4005 [0.5] Directed Studies in Geomatics

GEOM 4008 [0.5] Advanced Topics in Geographic Information Systems

GEOM 4009 [0.5] Custom Geomatics Applications

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Note: Familiarity with computers is assumed. Students with little computer experience may wish to take one of the following courses as part of their program of study:

BUSI 1402 [0.5] Introduction to Business Information and Communication Technologies

COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits

of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science,

Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars

PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours, B.Sc. Honours Geomatics: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the Bachelor of Arts Honours or Bachelor of Science Honours in Geomatics;
2. Obtained and maintained an overall minimum CGPA of 9.50 and a major CGPA of 9.50;
3. Have obtained third-year standing;
4. Successfully completed, by the start-date of the first work term:
 - a. BA Geomatics students: GEOG 2005/ENST 2005 and GEOG 2006/ENST 2006.

B.Sc. Geomatics students: GEOG 2006/ENST 2006).

- b. the required field course in their program (ENST 3900, GEOG 3000, GEOG 3010, or GEOG 3030)

5. Be registered as a full-time student.

B.A. Honours and B.Sc. Honours Geomatics students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: GEOM 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S/W	Fall	O
Winter	S	Winter	S	Winter	S	Winter	S/W	Winter	S
Summer		Summer		Summer	W	Summer	S/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite

averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Geomatics (GEOM) Courses

GEOM 1004 [0.5 credit]

Maps, Satellites and the Geospatial Revolution

Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing).

Includes: Experiential Learning Activity

Also listed as EARTH 2004.

Precludes additional credit for GEOM 2004 (no longer offered).

Lectures and laboratory, four hours a week.

GEOM 2005 [0.5 credit]

Introduction to Geospatial Programming

Computer programming for geomatics students focusing on storage, manipulation, management, visualization and analysis of geospatial data; Essential coding concepts and best practices including variables, loops, and conditional statements; programmatic handling of raster and vector data structures; batch geoprocessing and map production; GIS tool customization.

Includes: Experiential Learning Activity

Lectures and laboratory, four hours per week.

GEOM 2007 [0.5 credit]

Vector GIS: Points, Lines and Polygons

Storage, visualization, manipulation and analysis of vector geospatial data. Vector geoprocessing including buffering, overlays and topological analysis; feature classification and cartographic representation; managing coordinate reference systems for vector layers; selected applications of vector GIS such as urban planning, environmental and resource management and socio-economic mapping.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 1004 or permission of the Department.

Lectures and laboratory, four hours a week.

GEOM 2008 [0.5 credit]

Raster GIS: Pixels and Grids

Storage, visualization, manipulation, and analysis of gridded geospatial data; 3D visualization; digital terrain analysis; interpolation and filtering; raster geoprocessing and projections; selected topics and applications in raster GIS such as least-cost path analysis, natural hazard assessment, pollution mapping and hotspot analysis for population geography.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 1004 or permission of the Department.

Lectures and laboratory, four hours per week.

GEOM 3002 [0.5 credit]

Introduction to Remote Sensing

Principles and methods of remote sensing; visual interpretation of air photos and satellite imagery; digital image processing, analysis and classification for thematic mapping; introduction to various active and passive remote sensing imagery types such as optical, hyperspectral, RADAR and LiDAR.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2008 and third-year standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOM 3005 [0.5 credit]

Geospatial Analysis

An advanced course in geospatial analysis theory and practice; geoprocessing; geo-visualization; geostatistics; spatial modelling; working with spatio-temporal data structures; advanced site-suitability and network analysis; intermediate GIS tool customization.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2007 and GEOM 2008.

Lecture and laboratories five hours a week.

GEOM 3007 [0.5 credit]

Cartographic Theory and Design

Principles of and issues in cartography, cartographic communication and map design; practical aspects of cartographic representation using multimedia and online/interactive mapping.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2007 or GEOM 2008 or permission of the Department.

Lectures and laboratory four hours a week.

GEOM 3999 [0.0 credit]

Co-operative Work Term

Includes: Experiential Learning Activity

GEOM 4001 [0.5 credit]

Special Topics in Geomatics

A seminar focusing on selected topics in geomatics including advanced theory and/or application.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Geomatics or permission of the department.

Laboratory or seminar three hours a week.

GEOM 4003 [0.5 credit]**Remote Sensing of the Environment**

Advanced image enhancement; land cover classification for thematic mapping; biophysical modeling; applications in resources, environment, and urban mapping.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 3002 and Honours standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOM 4005 [0.5 credit]**Directed Studies in Geomatics**

Students pursue their interest in a selected theme in Geomatics on a tutorial basis with a member of the Department.

Prerequisite(s): permission of the Department.

GEOM 4008 [0.5 credit]**Advanced Topics in Geographic Information Systems**

Advanced methods and techniques in GIS applications including: positional and attribute error analysis, multiple criteria decision making, interpolation, elevation modeling and ortho-imaging, and spatial pattern measurement.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 3005 and Honours standing.

Lectures two hours a week, laboratory two hours a week.

GEOM 4009 [0.5 credit]**Custom Geomatics Applications**

Development and implementation of custom geomatics applications and workflows using programming and various geoprocessing tools. Project design, application development, GIS automation and documentation.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2005 and (GEOM 3002 or GEOM 3005 or GEOM 3007), or permission of the department.

Workshop three hours a week.

GEOM 4406 [0.5 credit]**Practicum I**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOG 4406.

Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.

Field placement one day a week.

GEOM 4408 [0.5 credit]**Practicum II**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOG 4408.

Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.

Field placement one day a week.

GEOM 4906 [1.0 credit]**Honours Research Project**

Candidates for B.Sc. with Concentration in Geomatics undertake a research project within their area of specialization. The project is supervised by a member of the department and a written report must be submitted.

The candidate may be examined orally on the report.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in BSc Geomatics, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOM 4909 [1.0 credit]**Honours Research Thesis**

Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904 / GEOM 4904 (no longer offered), GEOG 4906, GEOM 4906, GEOG 4909, ENST 4906 and ENST 4907.

Prerequisite(s): fourth-year Honours standing in B.A. Geomatics, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.

Hours to be arranged with faculty adviser.

German (Minor)

This section presents the requirements for programs in:

- Minor in German

Minor in German (4.0 credits)

Open to all undergraduate degree students.

Requirements:

1. 3.0 credits in GERM	3.0
2. 1.0 credit in GERM at the 3000-level or higher	1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.	

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

German (GERM) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

GERM 1010 [0.5 credit]

First-Year German I

For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.

Includes: Experiential Learning Activity
Precludes additional credit for GERM 1110.
Four hours a week.

GERM 1020 [0.5 credit]

First-Year German II

Continuation of first-year German. Oral skills, reading and writing. Compulsory attendance.

Includes: Experiential Learning Activity
Precludes additional credit for GERM 1110.
Prerequisite(s): grade of C or higher in GERM 1010, or permission of the School.
Four hours a week.

GERM 1110 [1.0 credit]

Intensive First-Year German

For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.

Includes: Experiential Learning Activity
Precludes additional credit for GERM 1010 and GERM 1020.

Eight hours a week (one term).

GERM 2000 [0.5 credit]

Reading in German I

For students with no prior knowledge of German who would like to develop the skills to read a variety of German texts, including passages from scholarly journals, reports, online newspaper or magazine articles.

Includes: Experiential Learning Activity
Three hours a week.

GERM 2010 [0.5 credit]

Second-Year German I

Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Includes: Experiential Learning Activity
Precludes additional credit for GERM 2110.
Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.
Four hours a week.

GERM 2020 [0.5 credit]

Second-Year German II

Continuation of second-year German. Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Includes: Experiential Learning Activity
Precludes additional credit for GERM 2110.
Prerequisite(s): grade of C or higher in GERM 2010, or permission of the School.
Four hours a week.

GERM 2110 [1.0 credit]

Intensive Second-Year German

Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Includes: Experiential Learning Activity
Precludes additional credit for GERM 2010 and GERM 2020.
Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.
Eight hours a week (one term).

GERM 3000 [0.5 credit]

Reading in German II

A continuation of Reading in German I. Further development of reading skills in German.

Includes: Experiential Learning Activity
Prerequisite(s): grade of C or higher in GERM 2000 or permission of the School.
Three hours a week.

GERM 3110 [1.0 credit]
Intensive Third-Year German

Continuation of the study of German to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 2020, GERM 2110, or permission of the School.

Six hours a week (one term).

GERM 4110 [1.0 credit]
Intensive Fourth-Year German

Advanced spoken and written German with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 3110, or permission of the School.

Six hours a week (one term).

GERM 4215 [0.5 credit]
German for Specific Purposes

Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.

Three hours per week.

GERM 4380 [0.5 credit]
Topics in German-speaking Cultures

Selected topics in German-speaking cultures and societies. Development of advanced language skills.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.

Three hours per week.

GERM 4900 [1.0 credit]
Independent Study

Research in a topic in German language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.

GERM 4901 [0.5 credit]
Independent Study

Research in a topic in German language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.

Global and International Studies

This section presents the requirements for programs in:

- Specialization in Africa and Globalization B.G.In.S. Honours
- Specialization in Europe and Russia in the World B.G.In.S. Honours
- Specialization in French and Francophone Studies B.G.In.S. Honours
- Specialization in Global and Transnational History B.G.In.S. Honours
- Specialization in Global Development B.G.In.S. Honours
- Specialization in Global Genders and Sexualities B.G.In.S. Honours
- Specialization in Global Inequalities and Social Change B.G.In.S. Honours
- Specialization in Global Law and Social Justice B.G.In.S. Honours
- Specialization in Global Literatures B. G. In. S. Honours
- Specialization in Global Media and Communication B.G.In.S. Honours
- Specialization in Global Migration and Transnationalism B.G.In.S. Honours
- Specialization in Global Politics B.G.In.S. Honours
- Specialization in Global Religions: Identity and Community B.G.In.S. Honours
- Specialization in Globalization and the Environment B.G.In.S. Honours
- Specialization in Globalization, Culture and Power B.G.In.S. Honours
- Specialization in International Economic Policy B.G.In.S. Honours
- Specialization in Latin American and Caribbean Studies B.G.In.S. Honours
- Specialization in Teaching English in Global Contexts B.G.In.S. Honours
- Stream in Africa and Globalization B.G.In.S.
- Stream in Europe and Russia in the World B.G.In.S.
- Stream in French and Francophone Studies B.G.In.S.
- Stream in Global and Transnational History B.G.In.S.
- Stream in Global Development B.G.In.S.
- Stream in Global Genders and Sexualities B.G.In.S.
- Stream in Global Inequalities and Social Change B.G.In.S.
- Stream in Global Law and Social Justice B.G.In.S.
- Stream in Global Literatures B.G.In.S.
- Stream in Global Media and Communication B.G.In.S.
- Stream in Global Migration and Transnationalism B.G.In.S.
- Stream in Global Politics B.G.In.S.
- Stream in Global Religions: Identity and Community B.G.In.S.
- Stream in Globalization and the Environment B.G. In.S.

- Stream in Globalization, Culture and Power B.G.In.S.
- Stream in International Economic Policy B.G.In.S.
- Stream in Latin American and Caribbean Studies B.G.In.S.
- Stream in Teaching English in Global Contexts B.G.In.S.

Program Requirements

International Experience Requirement

Prior to graduation, students in the Honours program must satisfy a requirement for international experience in ONE of the following ways:

1. **International exchange:** successful completion of at least 0.5 credit in approved courses through an international exchange agreement managed by the International Student Services Office, or
2. **Letter of Permission:** successful completion of at least 0.5 credit in approved courses by Letter of Permission, from an international or Canadian university offering a course taught outside Canada, or
3. **International placement:** successful completion of GINS 3900 [0.5] International Placement, or GINS 3901 [1.0] International Placement or GPOL 3100 [2.5] Internship in Global Politics, or an approved international placement offered through another unit, or
4. **Carleton course taught abroad:** successful completion of at least 0.5 credit in a Carleton course taught abroad, chosen from:

AFRI 3100 [0.5]	African Studies Abroad: Selected Topics
ARTH 3701 [0.5]	Art and Architecture on Site
ARTH 4701 [0.5]	Art and Architecture on Site
CLCV 3400 [0.5]	Greek and Roman Studies Abroad
EURR 4302 [0.5]	EU Summer Study Abroad
GEOG 3030 [0.5]	Regional Field Excursion
GINS 3300 [0.5]	Global and International Studies Abroad: Selected Topics
RELI 3850 [0.5]	Topics in the Study of Religion Abroad
5. **Group project:** successful completion of GINS 3100 [0.5] Global and International Group Project, or
6. **Experiential Learning Abroad:** successful completion of GINS 3200 [0.0] .

Language Requirement

Students in the BGIInS programs must satisfy the language requirement. The language requirement may be satisfied in one of two ways:

1. By course work

Students who lack second language skill upon entry, or who wish to learn a new language, can satisfy the language requirement by satisfactorily completing language instruction courses in a modern language other than English up to an intermediate level. In most cases, this means completing the equivalent of two years (2.0 credits) of university-level language study. Listed below are the specific Carleton language instruction courses

which satisfy the BGIInS language requirement. Courses taken at other institutions may also be used to meet the language requirement, as long as they are accepted by the Department of French or the School of Linguistics and Language Studies as being equivalent to, or at a higher level than, the courses specified below.

Minimum Course Requirements for Languages

American Sign Language

- | | |
|--------------------|--|
| ASLA 2020 [0.5] | Second-Year American Sign Language II |
| or ASLA 2110 [1.0] | Intensive Second-Year American Sign Language |

Arabic

- | | |
|-----------------|------------------------------|
| ARAB 2110 [1.0] | Intensive Second-Year Arabic |
|-----------------|------------------------------|

French

- | | |
|-----------------|----------|
| FREN 1100 [1.0] | French 3 |
|-----------------|----------|

German

- | | |
|--------------------|------------------------------|
| GERM 2020 [0.5] | Second-Year German II |
| or GERM 2110 [1.0] | Intensive Second-Year German |

Italian

- | | |
|--------------------|-------------------------------|
| ITAL 2020 [0.5] | Second-Year Italian II |
| or ITAL 2110 [1.0] | Intensive Second-Year Italian |

Japanese

- | | |
|-----------------|--------------------------------|
| JAPA 2110 [1.0] | Intensive Second-Year Japanese |
|-----------------|--------------------------------|

Mandarin Chinese

- | | |
|--------------------|--|
| CHIN 2020 [0.5] | Second-Year Mandarin Chinese II |
| or CHIN 2110 [1.0] | Intensive Second-Year Mandarin Chinese |

Portuguese

- | | |
|-----------------|----------------------------------|
| PORT 2110 [1.0] | Intensive Second-Year Portuguese |
|-----------------|----------------------------------|

Russian

- | | |
|-----------------|------------------------|
| RUSS 2020 [0.5] | Second-Year Russian II |
|-----------------|------------------------|

Spanish

- | | |
|--------------------|-------------------------------|
| SPAN 2020 [0.5] | Second-Year Spanish II |
| or SPAN 2110 [1.0] | Intensive Second-Year Spanish |

Other Languages

- | | |
|--------------------|--|
| LANG 2020 [0.5] | Second-Year Language II |
| or LANG 2110 [1.0] | Continuing Intensive Study of a Language |
| or LANG 2900 [1.6] | Supervised Autonomous Language Learning |

2. By demonstrating prior language proficiency

Students who already have intermediate or higher second language skills upon entry may be exempted from taking language courses. Students who wish to be exempted from taking language courses must apply for an exemption to the Program Director using the form available on the BGIInS website. Each application will be treated on its merits, but the following general guidelines apply:

- Secondary school language of instruction: Students whose secondary school transcripts show that their primary language of instruction in secondary school was a language other than English may be exempted from taking language courses.
- French immersion: Students who have successfully completed Grade 12 French immersion or the equivalent at a Canadian high school may be exempted from taking language courses.

- Proficient speakers: Students who do not qualify under either of the first two categories, but who nonetheless consider themselves proficient speakers of a language other than English, may be exempted from having to take language courses. For languages taught at Carleton, “proficiency” means a level at least equivalent to completion of one of the designated language courses listed above. For languages not taught at Carleton, “proficiency” means a level at least equivalent to two full years of university level language study. Proficiency may be demonstrated either through documentation (e.g. certification from a recognized language testing authority) or through testing. For languages not taught at Carleton, availability of a test depends upon faculty resource availability.

Note: For students enrolled in one of the geographically-defined regional Specializations or Streams, only certain languages relevant to that region of the world may be used to satisfy the language requirement. See the program requirements in each of the regional Specializations and Streams for further details.

Specializations

Specialization in Africa and Globalization

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0]	International Experience Requirement Preparation
3. 7.5 credits in: the Specialization	

Note: Language Requirement - Students choosing the Africa and Globalisation Specialization must fulfil their language requirement with a language relevant to Africa other than English. The Program Director will maintain a list of those languages suitable for this requirement.

a. 1.0 credit in: Foundations	1.0
AFRI 1001 [0.5]	Introduction to African Studies I
AFRI 1002 [0.5]	Introduction to African Studies II
b. 1.0 credit from: African Regions	1.0
AFRI 2002 [0.5]	The Horn of Africa
AFRI 2003 [0.5]	The Great Lakes Region of Africa
AFRI 2004 [0.5]	North Africa
AFRI 2005 [0.5]	West Africa
AFRI 2006 [0.5]	Southern Africa
c. 1.0 credit from: Intermediate African Studies	1.0

AFRI 3001 [0.5]	Globalization and Popular Culture in Africa	
AFRI 3002 [0.5]	Regions in Africa: Cultures, Society, Politics	
AFRI 3003 [0.5]	African Social and Political Thought	
AFRI 3004 [0.5]	The African City	
AFRI 3005 [0.5]	African Migrations and Diasporas	
AFRI 3007 [0.5]	Special Topic in African Studies	
AFRI 3200 [0.5]	Thematic Topic	
d. 0.5 credit from: African Experience		0.5
AFRI 3100 [0.5]	African Studies Abroad: Selected Topics	
AFRI 3900 [0.5]	Placement or 0.5 credit on an approved exchange program at an African university or research institution	
e. 0.5 credit from: History		0.5
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa	
HIST 2707 [0.5]	Modern Africa	
HIST 3717 [0.5]	Gender and Sexuality in Africa	
HIST 3906 [0.5]	Topics in World History (topic on Africa)	
f. 0.5 credit from: Politics		0.5
PSCI 3100 [0.5]	Politics of Development in Africa	
PSCI 3101 [0.5]	Politics of War in Africa	
g. 0.5 credit from Anthropology		0.5
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa	
ANTH 2660 [0.5]	Ethnography of North Africa	
h. 0.5 credit from: Literature and Culture		0.5
AFRI 3609 [0.5]	African Cinema	
AFRI 3916 [0.5]	Spoken Word Poetry Workshop	
ENGL 2926 [0.5]	African Literatures I	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
FREN 4212 [0.5]	Littératures francophones	
MUSI 4105 [0.5]	Study of Musics in Africa	
i. 0.5 credit from: African Diaspora		0.5
ENGL 2957 [0.5]	Literatures of the Americas II	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
ENGL 4975 [0.5]	Issues in Postcolonial Theory	
HIST 2710 [0.5]	Introduction to Caribbean History	
HIST 3406 [0.5]	African-American Women	
HIST 3710 [0.5]	Themes in Caribbean History	
MUSI 2005 [0.5]	Introduction to Jazz History	
MUSI 4005 [0.5]	Issues in Jazz Studies	
j. 0.5 credit in: Core Honours Seminar		0.5
AFRI 4000 [0.5]	Advanced Topics in African Studies	
k. 1.0 credit from: Honours Seminars and Honours Research Essay		1.0
AFRI 4003/ CHST 4003 [0.5]	History of 'The African Child'	
AFRI 4050 [0.5]	Selected Topics in African Studies	
AFRI 4060 [0.5]	African Feminisms	
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research	
GINS 4908 [1.0]	Honours Research Essay	
PSCI 4203 [0.5]	Southern Africa After Apartheid	
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa	

B. Credits Not Included in the Major CGPA (8.0 credits)	
4. 8.0 credits in: Free Electives	8.0
C. Additional Requirements	
5. The International Experience requirement must be met.	
6. The Language requirement must be met.	
Total Credits	20.0

Specialization in Europe and Russia in the World B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)	
1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0]	International Experience Requirement Preparation
3. 7.5 credits in: the Specialization	7.5
a. 0.5 credit in: Foundations	
EURR 1001 [0.5]	Introduction to European and Russian Studies
b. 1.0 credit in: Core Politics, Society, and International Affairs	
EURR 2001 [0.5]	Current Issues in European Politics and Society
EURR 2002 [0.5]	Europe and Russia in the World
c. 1.0 credit in: Core Literature and Culture	
EURR 3001 [0.5]	Literature and Culture in Europe
EURR 3002 [0.5]	Literature and Culture in Russia and Eurasia
d. 1.0 credit from: Modern History category	
e. 1.0 credit from: Politics and Economics category	
f. 0.5 credit from: Language, Art, Culture category	
g. 1.0 credit from: Approved Courses in European, Russian, and Eurasian Studies. May include EURR not used to fulfill another requirement. No more than 0.5 credit from the Contexts and Methods for Regional Studies category.	
h. 1.5 credit from: EURUS 4000-level Honours Course category. At least 1.0 credit in EURR. May include EURR 4908 (1.0) Honours Essay.	
B. Credits Not Included in the Major CGPA (8.0 credits)	
4. 8.0 credits in: free electives	8.0
C. Additional Requirements	
5. The International Experience requirement must be met.	

6. The BGINS Language requirement must be met with a regional language relevant to Europe and Russia other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

Total Credits **20.0**

Approved Courses in European, Russian, and Eurasian Studies

This list includes categories of approved courses that fulfill specific program requirements for all undergraduate programs in the Institute of European, Russian, and Eurasian Studies (EURUS). Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Modern History

HIST 2207 [1.0]	Nineteenth-Century Europe
HIST 2502 [0.5]	Modern Britain
HIST 2508 [0.5]	War, Politics, and Society in Twentieth-Century Global France
HIST 2510 [0.5]	19th-Century Germany
HIST 2511 [0.5]	20th-Century Germany
HIST 2600 [1.0]	History of Russia
HIST 2802 [0.5]	War and Society in Modern Europe, 1789-1914
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950
HIST 3113 [0.5]	Revolution and Society in France, 1789-1799
HIST 3115 [0.5]	Childhood and Youth in History
HIST 3217 [0.5]	Empire and Globalization
HIST 3604 [0.5]	Gender and Sexuality in Modern Europe
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions
HIST 3800 [0.5]	International History 1914-41
HIST 3801 [0.5]	International History 1941-90
HIST 3902 [0.5]	Topics in European History

Politics and Economics

ECON 3807 [0.5]	European Economic Integration
ECON 3808 [0.5]	The Economics of Transition
PSCI 3105 [0.5]	Imperialism
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3608 [0.5]	Migration Governance

Language, Art, Culture

GERM, ITAL, PORT, RUSS, SPAN or other approved course in a regional language at the 3000- or 4000-level or courses from the list below:

ARTH 1100 [0.0]	Art and Society: Prehistory to the Renaissance
ARTH 1101 [0.0]	Art and Society: Renaissance to the Present
ARTH 2202 [0.5]	Medieval Architecture and Art
ARTH 2300 [0.5]	Italian Renaissance Art

ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	COMS 2700 [0.5]	Global Media and Communication
ARTH 2404 [0.5]	Art of the 17th and 18th Centuries	COMS 3109 [0.5]	Communication, Culture and Identity
ARTH 2502 [0.5]	Art of the 19th Century	ECON 3600 [0.5]	Introduction to International Economics
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	ECON 3601 [0.5]	Introduction to International Trade
ARTH 3710 [0.5]	Architecture and Empire	ECON 3602 [0.5]	International Monetary Problems
FILM 2606 [0.5]	History of World Cinema I	ECON 3870 [0.5]	Comparative Economic Systems
FILM 2607 [0.5]	History of World Cinema II	FYSM 1603 [1.0]	Full-Year Seminar in European and Russian Studies
FREN 2100 [1.0]	French 4	FYSM 1614 [0.5]	One-Term Seminar in European and Russian Studies
FREN 2110 [1.0]	French 4: Writing	GEOG 2023 [0.5]	Cities, Inequality and Urban Change
FREN 2202 [0.5]	Introduction aux études littéraires 1	GEOG 2200 [0.5]	Global Connections
FREN 3212 [0.5]	Des manuscrits aux belles-lettres : de la littérature médiévale à l'humanisme	GEOG 2300 [0.5]	Space, Place and Culture
FREN 3213 [0.5]	Du Baroque aux Lumières	GEOG 2500 [0.5]	Climate Change: Social Science Perspectives
FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950	GEOG 3021 [0.5]	Geographies of Culture and Identity
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature	GEOG 3023 [0.5]	Cities in a Global World
HIST 3005 [0.5]	Medieval Aristocratic Life	GEOG 3404 [0.5]	Geographies of Economic Development
HIST 3006 [0.5]	Medieval Religious Life	GINS 3930 [0.5]	Carleton International Placement
HIST 3007 [0.5]	Medieval Intellectual Life	GINS 3931 [1.0]	Carleton International Placement
HIST 3105 [0.5]	Renaissance Europe	HIST 1001 [1.0]	The Making of Europe
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present	HIST 1002 [1.0]	Europe in the 20th Century
MUSI 2102 [0.5]	Music in an Age of Spectacle, Commerce, and Colonization	HIST 2811 [0.5]	Public History from Memory to Museums
MUSI 2103 [0.5]	Music in an Age of Order, Invention, and Revolution	HIST 3809 [0.5]	Historical Representations
MUSI 3400 [0.5]	A History of Opera before 1800	HIST 3810 [0.5]	Historical Theory
MUSI 3401 [0.5]	A History of Opera from 1800 to 1945	HIST 3812 [0.5]	Digital History
PHIL 1610 [0.5]	Great Philosophical Ideas, Part 1	HIST 3813 [0.5]	Problems in Global and Transnational Histories
PHIL 1620 [0.5]	Great Philosophical Ideas, Part 2	IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis
PHIL 2005 [1.0]	Ancient Philosophy: The Search for Wisdom	IPAF 4900 [0.5]	Research Experience Course
PHIL 2101 [0.5]	History of Ethics	LAWS 2105 [0.5]	Social Justice and Human Rights
PHIL 2103 [0.5]	Philosophy of Human Rights	LAWS 2601 [0.5]	Public International Law
PHIL 2202 [0.5]	Topics in Marxist Philosophy	LAWS 3602 [0.5]	International Human Rights
PHIL 3002 [0.5]	17th Century Philosophy	LAWS 3604 [0.5]	International Organizations
PHIL 3003 [0.5]	18th Century Philosophy	LAWS 3207 [0.5]	International Transactions
PHIL 3005 [0.5]	19th Century Philosophy	MGDS 2000 [0.5]	Global Migration and Transnationalism
PHIL 3009 [0.5]	Topics in European Philosophy	PSCI 1200 [0.5]	Politics in the World
PHIL 3330 [0.5]	Topics in History of Social and Political Philosophy	PSCI 2101 [0.5]	Comparative Politics of the Global North
PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy	PSCI 2500 [0.5]	Gender and Politics
PSCI 2301 [0.5]	History of Political Thought I	PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2302 [0.5]	History of Political Thought II	PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3308 [0.5]	Modern Political Thought	PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 3312 [0.5]	Enlightenment Political Thought	PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
RELI 1710 [0.5]	Judaism, Christianity, Islam	PSCI 3107 [0.5]	The Causes of War
RELI 2110 [0.5]	Judaism	PSCI 3307 [0.5]	Politics of Human Rights
RELI 2121 [0.5]	Hebrew Bible	PSCI 3309 [0.5]	Modern Ideologies
RELI 2230 [0.5]	Global Christianity	PSCI 3600 [0.5]	International Institutions
RELI 2310 [0.5]	Islam		

Context and Methods for Regional Studies

PSCI 3703 [0.5]	Governing in the Global Economy
SOCI 2000 [0.5]	Foundations of Sociological Inquiry
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods
SOCI 2005 [1.0]	Histories of Sociological Thought
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 2045 [0.5]	Gender and Society
SOCI 2160 [0.5]	War and Society
SOCI 2702 [0.5]	Power and Social Change
WGST 2800 [0.5]	Intersectional Identities
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 3803 [0.5]	Feminisms and Transnationalism
EURUS 4000-level Honours Courses	
EURR 4002 [0.5]	Post-Soviet States and Societies
EURR 4003 [0.5]	Social and Political Perspectives in Europe
EURR 4008 [0.5]	Nationalism in Russia and Eurasia
EURR 4100 [0.5]	Nation-Building in Central and Eastern Europe
EURR 4101 [0.5]	The Balkans in Transition – 1918 to 1989
EURR 4102 [0.5]	The Balkans since 1989
EURR 4103 [0.5]	The Great Russian Novel
EURR 4104 [0.5]	European Integration and European Security
EURR 4106 [0.5]	Selected Topics in European Integration Studies
EURR 4107 [0.5]	Russia's Regional and Global Ambitions
EURR 4201 [0.5]	Special Topics in European Studies
EURR 4202 [0.5]	Special Topics in Russian and Eurasian Studies
EURR 4204 [0.5]	Central Europe, Past and Present
EURR 4205 [0.5]	Politics of Identity in Europe and the Russian Area
EURR 4206 [0.5]	Internship and Applied Policy Skills
EURR 4207 [0.5]	Politics of Central Eurasia
EURR 4208 [0.5]	Foreign Policies of Soviet Successor States
EURR 4209 [0.5]	Politics of the Caucasus and Caspian Basin
EURR 4302 [0.5]	EU Summer Study Abroad
EURR 4303 [0.5]	Contemporary Europe: From Postwar to the European Union
EURR 4304 [0.5]	Europe and International Migration
EURR 4305 [0.5]	Imperial Russia and the Russian Revolution
EURR 4306 [0.5]	The Soviet Union: Power and Culture
EURR 4704 [0.5]	The Business Environment in Europe
EURR 4908 [1.0]	Honours Essay
HIST 4100 [1.0]	Seminar in Early Modern European History
HIST 4200 [1.0]	Seminar in European History
HIST 4201 [0.5]	Modern European History
HIST 4600 [1.0]	Seminar in Russian History
PSCI 4103 [0.5]	The Modern State

PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4610 [0.5]	Politics of Migration Management

Specialization in French and Francophone Studies

B.G.In.S. Honours (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses		4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation		
GINS 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization		
a. 3.0 credits in: Foundations		3.0
FYSM 1408 [1.0]	French on the World Stage ¹	
FREN 2202 [0.5]	Introduction aux études littéraires 1	
FREN 2203 [0.5]	Introduction aux études littéraires 2	
FREN 2401 [1.0]	Introduction à la linguistique française	
b. 0.5 credit in: Methods		0.5
FREN 3050 [0.5]	Compétences critiques	
c. 1.5 credits from: French and Francophone Studies at the 3000-level		1.5
FREN 3213 [0.5]	Du Baroque aux Lumières	
FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950	
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature	
FREN 3414 [0.5]	Sociolinguistique du français	
FREN 3415 [0.5]	Histoire du français	
d. 1.0 credit in: French and Francophone Studies - International Experience		1.0
1.0 credit in approved courses at the 3000-level or above taken in French, on exchange or a letter of permission, at a French-language university abroad		
e. 1.5 credits from: French and Francophone Studies at the 4000-level		1.5
FREN 4212 [0.5]	Littératures francophones	
FREN 4213 [0.5]	Littérature québécoise et canadienne d'expression française	
FREN 4214 [0.5]	Genre et mouvement	
FREN 4215 [0.5]	Problématiques contemporaines	
FREN 4300 [0.5]	Experiential learning in French and Francophone studies	
FREN 4412 [0.5]	Diversité du français	
FREN 4413 [0.5]	Diachronie du français	

FREN 4414 [0.5]	Analyse du français	
FREN 4415 [0.5]	Variation du français	
B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in:	Free Electives	8.0
C. Additional Requirements		
5. The International Experience Requirement must be met through an international exchange or a letter of permission (see item 3.d).		
6. To satisfy the Language Requirement, students must complete FREN 2100 [1.0], FREN 3701 [0.5] and FREN 3702 [0.5], or demonstrate equivalent proficiency.		
Total Credits		20.0

Notes:

- Students exempted from FYSM 1408 in Item 3.a. must replace it with another 1.0 credit in FREN at the 2000 level or higher.

Specialization in Global and Transnational History

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in:	Core Courses	4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in:	International Experience Requirement Preparation	
GINS 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in:	the Specialization	
a. 1.0 credit in:	Foundations	1.0
HIST 1707 [1.0]	World History	
b. 1.0 credit from:	Regional History	1.0
HIST 2308 [0.5]	Colonial Latin America	
HIST 2309 [0.5]	Modern Latin America	
HIST 2312 [0.5]	History of the Indian Ocean World	
HIST 2506 [0.5]	Introduction to Women's and Gender History	
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa	
HIST 2707 [0.5]	Modern Africa	
HIST 2710 [0.5]	Introduction to Caribbean History	
HIST 2802 [0.5]	War and Society in Modern Europe, 1789-1914	
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950	
c. 4.0 credits from:	Themes in History	4.0
HIST 2000 [1.0]	Medieval Europe	
HIST 2204 [0.5]	Early Modern Europe 1350-1650	

HIST 2206 [0.5]	Early Modern Europe 1600-1800	
HIST 2809 [0.5]	The Historian's Craft	
HIST 3001 [0.5]	History at the Movies	
HIST 3106 [0.5]	Social History of Sexuality	
HIST 3109 [0.5]	Social History of Alcohol	
HIST 3111 [0.5]	History of Humanitarian Aid	
HIST 3115 [0.5]	Childhood and Youth in History	
HIST 3120 [0.5]	History of the Body	
HIST 3216 [0.5]	The Scientific Revolution	
HIST 3217 [0.5]	Empire and Globalization	
HIST 3310 [0.5]	Animals in History	
HIST 3304 [0.5]	Canada-United States Relations	
HIST 3306 [0.5]	Canada's International Policies	
HIST 3500 [0.5]	Migration and Diaspora in Canada	
HIST 3510 [0.5]	Indigenous Peoples of Canada	
HIST 3511 [0.5]	Themes in Indigenous History	
HIST 3704 [0.5]	Aztecs	
HIST 3710 [0.5]	Themes in Caribbean History	
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions	
HIST 3715 [0.5]	Themes in South Asian History	
HIST 3717 [0.5]	Gender and Sexuality in Africa	
HIST 3800 [0.5]	International History 1914-41	
HIST 3801 [0.5]	International History 1941-90	
HIST 3809 [0.5]	Historical Representations	
HIST 3810 [0.5]	Historical Theory	
HIST 3820 [0.5]	Explorations in Historical Theory	
HIST 3905 [0.5]	Topics in International History	
HIST 3906 [0.5]	Topics in World History	
HIST 3907 [0.5]	Transnational Topic	
HIST 3908 [0.5]	Thematic Topic	
d. 0.5 credit in:	Advanced Core	0.5
HIST 3813 [0.5]	Problems in Global and Transnational Histories	
e. 1.0 credit from:	Honours Seminars	1.0
HIST 4700 [1.0]	Seminar in World History	
HIST 4802 [1.0]	Seminar in International History	
HIST 4805 [1.0]	Seminar on a Transnational or Thematic Topic	

B. Credits Not Included in the Major CGPA (8.0 credits)

- 4. 8.0 credits in** free electives 8.0

C. Additional Requirements

- The International Experience requirement must be met.
- The Language requirement must be met.

Total Credits		20.0
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Specialization in Global Development

B.G.In.S. Honours (20.0 credits)

A. Credits included in the Major CGPA (12.0 credits)

1. 4.5 credits in:	Core Courses	4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	

GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation		
GINS 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization		
a. 0.5 credit in: Foundations		0.5
GINS 1100 [0.5]	Global Development	
b. 1.5 credits in: Anthropology		1.5
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology	
or ANTH 1002 [0.5]	Introduction to Issues in Anthropology	
ANTH 2850 [0.5]	Development and Underdevelopment	
And one of:		
ANTH 3010 [0.5]	Language, Culture, and Globalization	
ANTH 3025 [0.5]	Anthropology and Human Rights	
ANTH 3027 [0.5]	Studies in Globalization and Human Rights	
ANTH 3040 [0.5]	The Global Middle Class	
ANTH 3045 [0.5]	Children and Childhood in a Globalized World	
ANTH 3355 [0.5]	Anthropology and the Environment	
c. 1.5 credits in: Economics		1.5
ECON 1001 [0.5]	Introduction to Microeconomics (or FYSM 1003 in place of ECON 1001 and ECON 1002)	
ECON 1002 [0.5]	Introduction to Macroeconomics (or FYSM 1003 in place of ECON 1001 and ECON 1002)	
ECON 3508 [0.5]	Introduction to Economic Development	
d. 1.5 credits in: Geography		1.5
GEOG 2200 [0.5]	Global Connections	
GEOG 3404 [0.5]	Geographies of Economic Development	
And one of:		
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
e. 1.5 credits in: Political Science		1.5
PSCI 2102 [0.5]	Comparative Politics of the Global South	
One of:		
PSCI 3100 [0.5]	Politics of Development in Africa	
PSCI 3204 [0.5]	Politics of Latin America	
PSCI 3502 [0.5]	Gender and Politics: Global South	
PSCI 3700 [0.5]	Government and Politics of South Asia	
And one of:		
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice	

PSCI 4105 [0.5]	Selected Problems in Development in the Global South	
f. 0.5 credit in: Research Methodologies		0.5
IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis	
g. 0.5 credits from: Advanced courses		0.5
ANTH 4005 [0.5]	Health and Globalization	
ANTH 4109/5109 [0.5]	Ethnography, Gender and Globalization	
ANTH 4560 [0.5]	Economic Anthropology	
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples	
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research	
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship	
ECON 3509 [0.5]	Development Planning and Project Evaluation	
ECON 3510 [0.5]	African Economic Development	
ECON 4507 [0.5]	The Economics of Development	
ECON 4508 [0.5]	International Aspects of Economic Development	
ECON 4601 [0.5]	International Trade Theory and Policy	
ECON 4602 [0.5]	International Monetary Theory and Policy	
ECON 4800 [0.5]	Spatial Economics	
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place	
GEOG 4024 [0.5]	Seminar in Globalization	
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice (if not used towards (e) above)	
PSCI 4105 [0.5]	Selected Problems in Development in the Global South (if not used towards (e) above)	
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa	
PSCI 4500 [0.5]	Gender and Globalization	
PSCI 4603 [0.5]	Analysis of International Political Economy	
PSCI 4605 [0.5]	Gender in International Relations	
PSCI 4800 [0.5]	Advanced International Relations Theory	
PSCI 4805 [0.5]	Political Economy of Global Money and Finance	
PSCI 4808 [0.5]	Global Environmental Politics	

Note: To meet the prerequisite requirements for the economics courses listed among the 4000-level Global Development electives above, students must have obtained a grade of C- or higher in one or both of ECON 2030 and ECON 2103 and, in the case of ECON 4800, a grade of C- or higher in ECON 2220 as well.

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits **20.0**

Specialization in Global Genders and Sexualities B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: The Specialization

a. 1.5 credits in: Foundations 1.5

SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
WGST 1808 [1.0]	Introduction to Feminist Social Transformation

b. 2.0 credits from: Theorizing Bodies and Borders 2.0

CRST 2001 [0.5]	Introduction to Critical Race Studies
CRST 4001 [0.5]	Advanced Critical Race Studies
SXST 2102 [0.5]	Sexuality, Gender, and Security
SXST 3103 [0.5]	Sexuality and Disability
SXST 3104 [0.5]	Transnational Sexualities
SXST 3106 [0.5]	Queer(ing) Archives
WGST 2803 [0.5]	Body Matters: The Politics of Bodies
WGST 2811 [0.5]	Masculinities
WGST 3001 [0.5]	Theory and Research in Feminist Social Transformation

c. 2.5 credits from: Advocacy and Activism 2.5

HUMR 2202 [0.5]	Power Relations and Human Rights
HUMR 2301 [0.5]	Human Rights and Sexualities
HUMR 3202 [0.5]	Human Rights and Resistance
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3806 [0.5]	Girlhoods
WGST 3807 [0.5]	Gendered Violence

d. 1.5 credits from: Honours Seminars in Global Gender and Sexuality 1.5

HUMR 4302 [0.5]	Transgender Human Rights
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HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World
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SXST 4101 [0.5]	Interdisciplinary Studies of Sexuality
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SXST 4103 [0.5]	Politics of Kink
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WGST 4812 [0.5]	Selected Topics in Women's and Gender Studies
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B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: free electives 8.0

C. Additional Requirements

5. The International Requirement must be met

6. The Language Requirement must be met.

Total Credits **20.0**

Specialization in Global Inequalities and Social Change B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization

a. 1.0 credit in: Foundations 1.0

SOCI 1001 [0.5]	Introduction to Sociology I
& SOCI 1002 [0.5]	Introduction to Sociology II

Or:

SOCI 1003 [1.0]	Introduction to Sociological Perspectives
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b. 1.5 credits in: Research Methods 1.5

SOCI 2000 [0.5]	Foundations of Sociological Inquiry
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And 1.0 credit from:

SOCI 2001 [0.5]	Introduction to Qualitative Research Methods
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SOCI 3000 [0.5]	Descriptive Statistics in Social Research
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SOCI 3002 [0.5]	Inferential Statistics in Social Research
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SOCI 3004 [0.5]	Qualitative Research: Approaches and Strategies
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c. 1.0 credit in: Theory 1.0

SOCI 2005 [1.0]	Histories of Sociological Thought
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d. 1.0 credit from: Global Inequalities and Social Change at the 2000-level 1.0

SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
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SOCI 2020 [0.5]	Race and Ethnicity	
SOCI 2030 [0.5]	Work, Industry and Occupations	
SOCI 2035 [0.5]	Technology, Culture and Society	
SOCI 2040 [0.5]	Food, Culture and Society	
SOCI 2045 [0.5]	Gender and Society	
SOCI 2060 [0.5]	Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives	
SOCI 2160 [0.5]	War and Society	
SOCI 2170 [0.5]	Foundations in Social Justice	
SOCI 2702 [0.5]	Power and Social Change	
SOCI 2705 [0.5]	Popular Culture in the Digital Age	
SOCI 2810 [0.5]	Selected Topics in Sociology	
SOCI 2820 [0.5]	Selected Topics in Sociology	
e. 1.5 credits from: Global Inequalities and Social Change at the 3000-level		1.5
SOCI 3006 [0.5]	Thinking the Social: Theories and Approaches	
SOCI 3010 [0.5]	Power, Oppression and Resistance	
SOCI 3019 [0.5]	Sociology of International Migration	
SOCI 3020 [0.5]	Studies in Race and Ethnicity	
SOCI 3027 [0.5]	Globalization and Human Rights	
SOCI 3030 [0.5]	Studies in Work, Industry and Occupations: Authority and Expertise	
SOCI 3035 [0.5]	Science, Culture and Society: Social Studies of Science	
SOCI 3038 [0.5]	Studies in Urban Sociology	
SOCI 3040 [0.5]	Studies in the Sociology of Gender	
SOCI 3044 [0.5]	Sociology of Sex and Sexuality	
SOCI 3045 [0.5]	Children and Childhood in a Globalized World	
SOCI 3160 [0.5]	Political Violence	
SOCI 3170 [0.5]	Social Justice in Action	
SOCI 3210 [0.5]	Selected Topics in Sociology	
SOCI 3220 [0.5]	Selected Topics in Sociology	
SOCI 3430 [0.5]	Studies in Collective Action and Social Movements	
SOCI 3570 [0.5]	Studies in Art, Culture and Society	
SOCI 3710 [0.5]	Introduction to Cultural Studies	
SOCI 3805 [0.5]	Studies in Population	
f. 1.5 credits from: Honours Seminars and Honours Thesis		1.5
SOCI 4002 [0.5]	Advanced Studies in Sociological Theory	
SOCI 4003 [0.5]	Advanced Studies in Qualitative Research	
SOCI 4009 [0.5]	Advanced Studies in Quantitative Research	
SOCI 4020 [0.5]	Advanced Studies in Race and Ethnicity	
SOCI 4039 [0.5]	Women in Contemporary Middle East Societies	
SOCI 4040 [0.5]	Feminist Sociology of Intersectionality	
SOCI 4160 [0.5]	War, Terrorism and State Terrorism	
SOCI 4170 [0.5]	Community-Engaged Sociology	
SOCI 4200 [0.5]	War, Security and Citizenship	
SOCI 4730 [0.5]	Colonialism and Post-Colonialism	
SOCI 4750 [0.5]	Advanced Studies in Globalization and Citizenship	
SOCI 4850 [0.5]	Contemporary Problems in Sociology	
SOCI 4860 [0.5]	Contemporary Problems in Sociology	
SOCI 4900 [1.0]	Honours Thesis	
SOCI 4910 [0.5]	Tutorial in Sociology	
SOCI 4920 [0.5]	Tutorial in Sociology	
B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in: Free Electives		8.0
C. Additional Requirements		
5. The International Experience requirement must be met.		
6. The Language requirement must be met.		
Total Credits		20.0
Specialization in Global Law and Social Justice B.G.In.S. Honours (20.0 credits)		
This Specialization is also available with a <i>Mention : français</i> option.		
A. Credits Included in the Major CGPA (12.0 credits)		
1. 4.5 credits in: Core Courses		4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation		
GINS 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization		
a. 1.0 credit in: Law Foundations		1.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
b. 0.5 credit in: Research Methodologies		0.5
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1	
c. 1.0 credit in: Second Year Core Courses		1.0
LAWS 2105 [0.5]	Social Justice and Human Rights or HUMR 2001 [0.5] Human Rights: Theories and Foundations and	
LAWS 2601 [0.5]	Public International Law	
d. 0.5 credit from: Third Year Core Courses		0.5
LAWS 3602 [0.5]	International Human Rights	
LAWS 3604 [0.5]	International Organizations	
e. 3.5 credits from: Global Law and Social Justice (students must select at least 0.5 credit at the 4000 level from this list)		3.5
HUMR 3002 [0.5]	Right to the City	

HUMR 3301 [0.5]	Racialization, Racism and Human Rights	
HUMR 3302 [0.5]	Culture, Religion, and Women's Human Rights	
HUMR 3303 [0.5]	Children's Rights	
HUMR 3401 [0.5]	Histories of Persecution and Genocide	
HUMR 3501 [0.5]	Social, Economic and Cultural Rights	
HUMR 3503 [0.5]	Global Environmental Justice	
HUMR 3504 [0.5]	Public Health and Human Rights	
HUMR 4201 [0.5]	Citizenship and Human Rights (if not used in f)	
HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World (if not used in f)	
HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements (if not used in f)	
LAWS 3207 [0.5]	International Transactions	
LAWS 3208 [0.5]	International Trade Regulation	
LAWS 3503 [0.5]	Equality and Discrimination	
LAWS 3504 [0.5]	Law and Aboriginal Peoples	
LAWS 3509 [0.5]	The Charter of Rights Topics	
LAWS 3602 [0.5]	International Human Rights (if not used in d)	
LAWS 3604 [0.5]	International Organizations (if not used in d)	
LAWS 4101 [0.5]	Contemporary Justice Theories	
LAWS 4102 [0.5]	Controversies in Rights Theory	
LAWS 4105 [0.5]	Global Justice Theory (if not used in f)	
LAWS 4106 [0.5]	Law and Violence	
LAWS 4200 [0.5]	International Economic Law (if not used in f)	
LAWS 4601 [0.5]	Transnational Law and Human Rights (if not used in f)	
LAWS 4602 [0.5]	Is Religious Freedom a Human Right?	
LAWS 4603 [0.5]	Transitional Justice (if not used in f)	
LAWS 4605 [0.5]	Topics in International Law	
LAWS 4606 [0.5]	International Law of Armed Conflict (if not used in f)	
LAWS 4607 [0.5]	Immigration and Refugee Law (if not used in f)	
LAWS 4610 [0.5]	Special Topics in Transnational Law and Human Rights	
LAWS 4800 [0.5]	Environment and Social Justice	
LAWS 4901 [0.5]	Tutorial in Law (topic in Global Law and Social Justice)	
LAWS 4902 [0.5]	Tutorial in Law (topic in Global Law and Social Justice)	
LAWS 4903 [0.5]	Advanced Legal Topics (topic in Global Law and Social Justice)	
LAWS 4904 [0.5]	Advanced Legal Topics (topic in Global Law and Social Justice)	
f. 1.0 credit from: Core Honours Seminars and Honours Research Essay		1.0
GINS 4908 [1.0]	Honours Research Essay (topic in Global Law and Social Justice)	
HUMR 4201 [0.5]	Citizenship and Human Rights	

HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World	
HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements	
LAWS 4105 [0.5]	Global Justice Theory	
LAWS 4200 [0.5]	International Economic Law	
LAWS 4601 [0.5]	Transnational Law and Human Rights	
LAWS 4603 [0.5]	Transitional Justice	
LAWS 4606 [0.5]	International Law of Armed Conflict	
LAWS 4607 [0.5]	Immigration and Refugee Law	
B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in: free electives		8.0
C. Additional Requirements		
5. The International Experience requirement must be met.		
6. The Language requirement must be met.		
Total Credits		20.0

Specialization in Global Literatures

B. G. In. S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)		
1. 4.5 credits in: Core Courses		4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation		
GINS 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization		
a. 1.0 credit in: Foundations		1.0
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1010 [0.5]	Writing Essays about Literature	
b. 1.0 credit from: Methods		1.0
ENGL 2005 [0.5]	Theory and Criticism	
ENGL 3106 [1.0]	Theories and Critical Practices	
ENGL 3605 [0.5]	Modern and Contemporary Literary Theory	
ENGL 3965 [0.5]	Intro to Postcolonial Theory	
c. 1.0 credit from: Global Literatures at the 2000-level		1.0
ENGL 2908 [0.5]	Celtic Literatures	
ENGL 2920 [0.5]	Topics in Decolonization and Migration I	
ENGL 2926 [0.5]	African Literatures I	
ENGL 2927 [0.5]	African Literatures II	
ENGL 2936 [0.5]	South Asian Literatures I	
ENGL 2937 [0.5]	South Asian Literatures II	
ENGL 2956 [0.5]	Literatures of the Americas I	
ENGL 2957 [0.5]	Literatures of the Americas II	

d. 1.0 credit from: Global Literatures at the 3000-level	1.0
ENGL 3805 [0.5] Literature and Culture in Russia and Eurasia	
ENGL 3930 [0.5] Topics in Decolonization and Migration II	
ENGL 3940 [0.5] Studies in Diaspora Lit.	
ENGL 3960 [0.5] Studies in Indigenous Literature	
ENGL 3972 [0.5] Studies in Postcolonial Literature	
e. 1.0 additional credit in Global Literatures courses, not already used in c. or d. above	1.0
f. 1.0 credit from: Context for Global Literatures	1.0
ENGL 2105 [0.5] History of the English Language	
ENGL 2700 [0.5] American Literatures I	
ENGL 2701 [0.5] American Literatures II	
ENGL 2802 [1.0] Indigenous and Canadian Literatures	
g. 1.5 credits from: Honours Seminars and Honours Research Essay	1.5
ENGL 4115 [0.5] Culture and the Text (topic in Global Literatures)	
ENGL 4802 [0.5] Race, Ethnicity and Canadian Lit.	
ENGL 4947 [0.5] Issues in Diaspora Literature	
ENGL 4960 [0.5] Indigenous Literatures I	
ENGL 4961 [0.5] Indigenous Literatures II	
ENGL 4975 [0.5] Issues in Postcolonial Theory	
GINS 4908 [1.0] Honours Research Essay (topic in Global Literatures)	
B. Credits Not Included in the Major CGPA (8.0 credits)	
4. 8.0 credits in: Free Electives	8.0
C. Additional Requirements	
5. The International Experience requirement must be met.	
6. The Language requirement must be met.	
Total Credits	20.0
Specialization in Global Media and Communication	
B.G.In.S. Honours (20.0 credits)	
A. Credits Included in the Major CGPA (12.0 credits)	
1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5] Global History	
GINS 1010 [0.5] International Law and Politics	
GINS 1020 [0.5] Ethnography, Globalization and Culture	
GINS 2000 [0.5] Ethics and Globalization	
GINS 2010 [0.5] Globalization and International Economic Issues	
GINS 2020 [0.5] Global Literatures	
GINS 3010 [0.5] Global and International Theory	
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5] Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0] International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization	
a. 1.5 credits in: Foundations	1.5

COMS 1001 [0.5] Foundations in Communication and Media Studies	
COMS 1002 [0.5] Current Issues in Communication and Media	
COMS 2700 [0.5] Global Media and Communication	
b. 1.0 credit in: Introductory Theory and Methods	1.0
COMS 2003 [0.5] Theoretical Foundations in Communication and Media Studies	
COMS 2004 [0.5] Introduction to Communication Research	
c. 2.0 credits in: Advanced Theory and Methods	2.0
COMS 3001 [0.5] Quantitative Research in Communication	
COMS 3002 [0.5] Qualitative Research in Communication	
COMS 3400 [0.5] Ethical Controversies in Media and Communication	
COMS 3500 [0.5] Current Issues in Communication and Media Theory	
d. 3.0 credits from: Advanced Core	3.0
(at least 1.0 credits at the 3000 level)	
COMS 3108 [0.5] Media Industries and the Network Society	
COMS 3109 [0.5] Communication, Culture and Identity	
COMS 3311 [0.5] Media and Communication in Regional Contexts	
COMS 4306 [0.5] Media and Conflict	
COMS 4316 [0.5] Indigenous Media in Global Contexts	
COMS 4317 [0.5] Digital Media and Global Network Society	
COMS 4401 [0.5] Global Internet Policy and Governance	
COMS 4406 [0.5] Open Government and Communication	
COMS 4603 [0.5] Diaspora and Communication	
COMS 4605 [0.5] Media, Race and Ethnicity	
COMS 4606 [0.5] Global Media and Popular Culture	
COMS 4908 [1.0] Honours Research Essay	
B. Credits Not Included in the Major CGPA (8.0 credits)	
4. 8.0 credits in: free electives	8.0
C. Additional Requirements	
5. The International Experience requirement must be met.	
6. The Language requirement must be met.	
Total Credits	20.0
Specialization in Global Migration and Transnationalism	
B.G.In.S. Honours (20.0 credits)	
A. Credits Included in the Major CGPA (12.0 credits)	
1. 4.5 credits in Core Courses	4.5
GINS 1000 [0.5] Global History	
GINS 1010 [0.5] International Law and Politics	
GINS 1020 [0.5] Ethnography, Globalization and Culture	
GINS 2000 [0.5] Ethics and Globalization	
GINS 2010 [0.5] Globalization and International Economic Issues	
GINS 2020 [0.5] Global Literatures	
GINS 3010 [0.5] Global and International Theory	
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5] Honours Seminar in Global and International Studies	

GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in International Experience Requirement Preparation		
GINS 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in the Specialization		7.5
a. 1.0 credits in Foundations		
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology	
ANTH 1002 [0.5]	Introduction to Issues in Anthropology	
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1010 [0.5]	Writing Essays about Literature	
FYSM 1408 [1.0]	French on the World Stage	
GEOG 1020 [0.5]	People, Places and Environments	
HIST 1707 [1.0]	World History	
PSCI 1200 [0.5]	Politics in the World	
PSCI 1501 [0.5]	Politics of Migration	
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
b. 0.5 credit in Specialization Core Course		
MGDS 2000 [0.5]	Global Migration and Transnationalism	
c. 3.5 credits from Global Migration and Transnationalism Thematic Categories		
Must include 0.5 credit from each category:		
1) Transnationalism in the Arts, Literature, and Music		
2) Historical, Cultural, and Regional Contexts		
3) Citizenship, Identity, and Rights		
4) International Migration, Globalization, and Politics		
At least 1.0 credit must be at the 3000-level. Only 0.5 credit at the 1000-level.		
d. 1.0 credits from: Advanced Approaches in Global Migration and Transnationalism		
AFRI 3005 [0.5]	African Migrations and Diasporas	
ECON 3370 [0.5]	The Economics of Migration	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
HIST 3500 [0.5]	Migration and Diaspora in Canada	
HIST 3507 [0.5]	An Immigrant's Guide to Canada	
PSCI 3608 [0.5]	Migration Governance	
SOCI 3019 [0.5]	Sociology of International Migration	
e. 1.5 credits from Approved 4000-level Honours Courses in Global Migration and Transnationalism		
Notes:		
1) Please see the list of Approved Courses in Global Migration and Transnationalism in this calendar for courses that fulfill the above thematic category and 4000-level Honours requirements.		
2) Courses in the Specialization that potentially fulfill more than one specialization requirement can only be counted once.		

3) Some upper-level courses on this list may have specific prerequisites. Students are encouraged to consult the course calendar when planning their schedules to be aware of those prerequisites and to fulfill them before registering. Prerequisites that do not count towards the Major CGPA may be counted towards free electives.

B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in:	Free Electives	8.0
C. Additional Requirements		
5. The International Experience requirements must be met.		
6. The Language requirement must be met.		
Total Credits		20.0

Approved Courses in Global Migration and Transnationalism

This list contains approved courses in Global Migration and Transnationalism that fulfil the four thematic and 4000-level Honours requirements for the BGIInS Global Migration and Transnationalism Stream and Specialization. Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Global Migration and Transnationalism Thematic Categories

- 1) Transnationalism in the Arts, Literature, and Music
- 2) Historical, Cultural, and Regional Contexts
- 3) Citizenship, Identity, and Rights
- 4) International Migration, Globalization, and Politics

Approved Courses in Global Migration and Transnationalism

1) Transnationalism in the Arts, Literature, and Music	
AFRI 3609 [0.5]	African Cinema
ARTH 2003 [0.5]	Canadian Twentieth-Century and Contemporary Art
ARTH 2005 [0.5]	Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
ARTH 2006 [0.5]	Arts of the First Peoples: The Southwest, the West Coast and the Arctic
ARTH 2007 [0.5]	Asian Art
ARTH 2008 [0.5]	Inuit Art
ARTH 2107 [0.5]	Islamic Architecture and Art
ARTH 2108 [0.5]	Art Worlds
ARTH 3007 [0.5]	Modern Asian Art
ARTH 3008 [0.5]	Contemporary Chinese Art and Art History
ENGL 2920 [0.5]	Topics in Decolonization and Migration I
ENGL 2926 [0.5]	African Literatures I
ENGL 2927 [0.5]	African Literatures II
ENGL 2936 [0.5]	South Asian Literatures I
ENGL 2937 [0.5]	South Asian Literatures II
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
ENGL 3603 [0.5]	20th- and 21st-century Fiction
ENGL 3702 [0.5]	American Culture

ENGL 3930 [0.5]	Topics in Decolonization and Migration II	RELI 2510 [0.5]	Hinduism
ENGL 3940 [0.5]	Studies in Diaspora Lit.	RELI 2720 [0.5]	Indigenous Religions of Canada
ENGL 3960 [0.5]	Studies in Indigenous Literature	RELI 2750 [0.5]	Sikhism
ENGL 3965 [0.5]	Intro to Postcolonial Theory	RELI 3330 [0.5]	Sufism
ENGL 3972 [0.5]	Studies in Postcolonial Literature	RELI 3422 [0.5]	Buddhism Beyond India
EURR 3001 [0.5]	Literature and Culture in Europe	RELI 3522 [0.5]	Modern Hinduism
EURR 3002 [0.5]	Literature and Culture in Russia and Eurasia	3) Citizenship, Identity, and Rights	
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature	ANTH 2020 [0.5]	Race and Ethnicity
MUSI 2005 [0.5]	Introduction to Jazz History	ANTH 3010 [0.5]	Language, Culture, and Globalization
MUSI 2008 [0.5]	Music of the World's Peoples	ANTH 3020 [0.5]	Studies in Race and Ethnicity
MUSI 3106 [0.5]	Popular Musics of the World	ANTH 3025 [0.5]	Anthropology and Human Rights
2) Historical, Cultural, and Regional Contexts		ANTH 3027 [0.5]	Studies in Globalization and Human Rights
AFRI 1001 [0.5]	Introduction to African Studies I	ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
AFRI 1002 [0.5]	Introduction to African Studies II	BUSI 2702 [0.5]	Introduction to International Management
AFRI 3005 [0.5]	African Migrations and Diasporas	BUSI 3700 [0.5]	Cross-cultural Communication
ANTH 2610 [0.5]	Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research	COMS 3109 [0.5]	Communication, Culture and Identity
EURR 1001 [0.5]	Introduction to European and Russian Studies	ECON 3380 [0.5]	The Economics of Gender and Ethnicity
EURR 2001 [0.5]	Current Issues in European Politics and Society	INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
EURR 2002 [0.5]	Europe and Russia in the World	INDG 2011 [0.5]	Contemporary Indigenous Studies
HIST 2304 [1.0]	Social and Cultural History of Canada	INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality
HIST 2308 [0.5]	Colonial Latin America	INDG 3001 [0.5]	Indigenous Governance
HIST 2309 [0.5]	Modern Latin America	INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence
HIST 2312 [0.5]	History of the Indian Ocean World	HUMR 3301 [0.5]	Racialization, Racism and Human Rights
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa	HUMR 3302 [0.5]	Culture, Religion, and Women's Human Rights
HIST 2707 [0.5]	Modern Africa	HUMR 3401 [0.5]	Histories of Persecution and Genocide
HIST 2710 [0.5]	Introduction to Caribbean History	LAWS 2105 [0.5]	Social Justice and Human Rights
HIST 3111 [0.5]	History of Humanitarian Aid	LAWS 2502 [0.5]	Law, State and Citizen
HIST 3209 [0.5]	Canadian Urban History	LAWS 3503 [0.5]	Equality and Discrimination
HIST 3406 [0.5]	African-American Women	LAWS 3504 [0.5]	Law and Aboriginal Peoples
HIST 3413 [0.5]	The United States and Its Borderlands	LAWS 3602 [0.5]	International Human Rights
HIST 3500 [0.5]	Migration and Diaspora in Canada	PSCI 3702 [0.5]	Israeli-Palestinian Relations
HIST 3507 [0.5]	An Immigrant's Guide to Canada	PSCI 3802 [0.5]	Globalization and Human Rights
HIST 3510 [0.5]	Indigenous Peoples of Canada	PSCI 3805 [0.5]	Politics of Race
HIST 3511 [0.5]	Themes in Indigenous History	RELI 2712 [0.5]	Religious Diversity of Canada
HIST 3710 [0.5]	Themes in Caribbean History	RELI 2800 [0.5]	Indigenous Traditions
HIST 3712 [0.5]	Mexico: Aztecs to Narcos	RELI 3101 [0.5]	Special Topics in Religions and the Body
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions	SOCI 2020 [0.5]	Race and Ethnicity
HIST 3715 [0.5]	Themes in South Asian History	SOCI 3020 [0.5]	Studies in Race and Ethnicity
HIST 3813 [0.5]	Problems in Global and Transnational Histories	SOCI 3027 [0.5]	Globalization and Human Rights
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I	SOCI 3805 [0.5]	Studies in Population
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II	SOWK 3206 [0.5]	Community Development and Social Change in an International Context
RELI 1712 [0.5]	Religions of South and East Asia	SOWK 3207 [0.5]	Human Rights Practice in Civil Society
RELI 2110 [0.5]	Judaism	WGST 2800 [0.5]	Intersectional Identities
RELI 2310 [0.5]	Islam		
RELI 2355 [0.5]	Islamic Ethics		
RELI 2410 [0.5]	Buddhism		

WGST 2803 [0.5]	Body Matters: The Politics of Bodies	COMS 4605 [0.5]	Media, Race and Ethnicity
WGST 3803 [0.5]	Feminisms and Transnationalism	ENGL 4609 [0.5]	Global Stages and Theories
4) International Migration, Globalization, and Politics			
ANTH 2850 [0.5]	Development and Underdevelopment	ENGL 4802 [0.5]	Race, Ethnicity and Canadian Lit.
ECON 3370 [0.5]	The Economics of Migration	ENGL 4947 [0.5]	Issues in Diaspora Literature
GEOG 2200 [0.5]	Global Connections	ENGL 4960 [0.5]	Indigenous Literatures I
GEOG 2300 [0.5]	Space, Place and Culture	ENGL 4961 [0.5]	Indigenous Literatures II
GEOG 3021 [0.5]	Geographies of Culture and Identity	ENGL 4975 [0.5]	Issues in Postcolonial Theory
GEOG 3024 [0.5]	Understanding Globalization	ENGL 4976 [0.5]	Issues in Postcolonial Literature
GEOG 3700 [0.5]	Population Geography	EURR 4207 [0.5]	Politics of Central Eurasia
HIST 3217 [0.5]	Empire and Globalization	EURR 4209 [0.5]	Politics of the Caucasus and Caspian Basin
HIST 3813 [0.5]	Problems in Global and Transnational Histories	EURR 4304 [0.5]	Europe and International Migration
PSCI 1501 [0.5]	Politics of Migration	FREN 4412 [0.5]	Diversité du français
PSCI 2102 [0.5]	Comparative Politics of the Global South	GEOG 4021 [0.5]	Seminar in Culture, Identity and Place
PSCI 3100 [0.5]	Politics of Development in Africa	GEOG 4023 [0.5]	Seminar in Special Topics on the City
PSCI 3101 [0.5]	Politics of War in Africa	GEOG 4024 [0.5]	Seminar in Globalization
PSCI 3102 [0.5]	Politics of Development of China	GINS 4908 [1.0]	Honours Research Essay
PSCI 3105 [0.5]	Imperialism	HIST 4700 [1.0]	Seminar in World History
PSCI 3203 [0.5]	Government and Politics in the Middle East	HIST 4701 [0.5]	African History
PSCI 3608 [0.5]	Migration Governance	HIST 4702 [0.5]	South Asian History
PSCI 3700 [0.5]	Government and Politics of South Asia	HIST 4703 [0.5]	The Global South
SOCI 3019 [0.5]	Sociology of International Migration	HIST 4704 [0.5]	Caribbean and Latin American History
SOCI 3805 [0.5]	Studies in Population	HIST 4805 [1.0]	Seminar on a Transnational or Thematic Topic
Approved 4000-level Honours Courses in Global Migration and Transnationalism			
AFRI 4000 [0.5]	Advanced Topics in African Studies	HIST 4806 [0.5]	Global, Transnational, or Thematic History
AFRI 4003 [0.5]	History of 'The African Child'	HUMR 4201 [0.5]	Citizenship and Human Rights
AFRI 4050 [0.5]	Selected Topics in African Studies	HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology	HUMR 4404 [0.5]	Rights of Refugees and Displaced Persons
ANTH 4020 [0.5]	Advanced Studies in Race and Ethnicity	HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
ANTH 4109 [0.5]	Ethnography, Gender and Globalization	INDG 4001 [0.5]	Indigeneity in the City
ANTH 4200 [0.5]	War, Security and Citizenship	INDG 4011 [0.5]	Indigenous Representations
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship	LACS 4819 [0.5]	Latin America and the World
ARTH 4003 [0.5]	Topics in Contemporary Chinese Art	LAWS 4006 [0.5]	Religion and State in Canada
ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art	LAWS 4102 [0.5]	Controversies in Rights Theory
ARTH 4007 [0.5]	Topics in Asian Art	LAWS 4601 [0.5]	Transnational Law and Human Rights
ARTH 4008 [0.5]	Transnational Theory	LAWS 4606 [0.5]	International Law of Armed Conflict
BUSI 4706 [0.5]	International Human Resource Management	LAWS 4607 [0.5]	Immigration and Refugee Law
CDNS 4400 [0.5]	Space, Landscape and Identity in Canada	MGDS 4900 [0.5]	Special Topics in Migration and Diaspora Studies
CDNS 4500 [0.5]	Global Canada	MUSI 4005 [0.5]	Issues in Jazz Studies
COMS 4316 [0.5]	Indigenous Media in Global Contexts	MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada
COMS 4603 [0.5]	Diaspora and Communication	MUSI 4104 [0.5]	First Peoples Music in Canada
		PSCI 4503 [0.5]	Politics of Central Eurasia
		PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin
		PSCI 4610 [0.5]	Politics of Migration Management
		PSCI 4801 [0.5]	Selected Problems in Global Politics

PSCI 4807 [0.5]	Politics of Citizenship and Migration
PSCI 4817 [0.5]	International Politics of Forced Migration
PSCI 4819 [0.5]	Latin America and the World
RELI 4850 [0.5]	Seminar in the Study of Religion
SOCI 4043 [0.5]	Families in the 21st Century
SOWK 4103 [0.5]	Practice and Policy in Immigration

Specialization in Global Politics

B.G.In.S. Honours (20.0 Credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization 7.5

a. 1.5 credits in: Core Courses

GPOL 1500 [0.5]	Debates in Global Politics
GPOL 2500 [0.5]	Debates in Comparative Politics
GPOL 3000 [0.5]	Themes in Global and Comparative Politics

b. 0.5 credit in: Global Political Economy

PSCI 2602 [0.5]	International Relations: Global Political Economy
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c. 0.5 credit in Political Science at the 2000 level

PSCI 2002 [0.5]	Canadian Politics and Civil Society
PSCI 2003 [0.5]	Canadian Political Institutions
PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2102 [0.5]	Comparative Politics of the Global South

PSCI 2200 [0.5]	Introduction to U.S. Politics
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PSCI 2401 [0.5]	Public Affairs Analysis
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PSCI 2500 [0.5]	Gender and Politics
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d. 1.0 credit in: Research Methodologies

PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
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PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
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e. 2.5 credits in: Global Politics Internship, or 2.5 credits from Global Politics Electives

GPOL 3100 [2.5]	Internship in Global Politics
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Or

2.5 credits from: Global Politics Electives

EURR 2001 [0.5]	Current Issues in European Politics and Society
EURR 2002 [0.5]	Europe and Russia in the World
PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3102 [0.5]	Politics of Development of China
PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia
PSCI 3105 [0.5]	Imperialism
PSCI 3107 [0.5]	The Causes of War
PSCI 3108 [0.5]	Politics of Popular Culture
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3200 [0.5]	U.S. Constitutional Politics
PSCI 3203 [0.5]	Government and Politics in the Middle East
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3407 [0.5]	Public Opinion and Public Policy
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3601 [0.5]	Theories of International Politics
PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 3801 [0.5]	Environmental Politics
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 3805 [0.5]	Politics of Race
f. 1.5 credits from: Honours Seminars and Honours Research Essay	
EURR 4002 [0.5]	Post-Soviet States and Societies
EURR 4003 [0.5]	Social and Political Perspectives in Europe
EURR 4008 [0.5]	Nationalism in Russia and Eurasia
EURR 4100 [0.5]	Nation-Building in Central and Eastern Europe
EURR 4101 [0.5]	The Balkans in Transition – 1918 to 1989
EURR 4104 [0.5]	European Integration and European Security
EURR 4106 [0.5]	Selected Topics in European Integration Studies
EURR 4107 [0.5]	Russia's Regional and Global Ambitions

EURR 4201 [0.5]	Special Topics in European Studies
EURR 4202 [0.5]	Special Topics in Russian and Eurasian Studies
EURR 4204 [0.5]	Central Europe, Past and Present
EURR 4305 [0.5]	Imperial Russia and the Russian Revolution
EURR 4306 [0.5]	The Soviet Union: Power and Culture
GINs 4908 [1.0]	Honours Research Essay (topic in Global Politics)
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State
PSCI 4103 [0.5]	The Modern State
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
PSCI 4105 [0.5]	Selected Problems in Development in the Global South
PSCI 4203 [0.5]	Southern Africa After Apartheid
PSCI 4204 [0.5]	Elections
PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
PSCI 4209 [0.5]	Westminster Democracies: Parliaments, Parties and Elections
PSCI 4303 [0.5]	Governmentality and Politics
PSCI 4400 [0.5]	Socio-Technical Change and Public Policy Design
PSCI 4403 [0.5]	Reproductive Rights Policy in North America
PSCI 4407 [0.5]	Public Policy: Content and Creation
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area
PSCI 4502 [0.5]	Post-Soviet States and Societies
PSCI 4503 [0.5]	Politics of Central Eurasia
PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin
PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4601 [0.5]	Foreign Policies of Soviet Successor States
PSCI 4603 [0.5]	Analysis of International Political Economy
PSCI 4604 [0.5]	Selected Problems in International Political Economy
PSCI 4605 [0.5]	Gender in International Relations
PSCI 4606 [0.5]	American Foreign Policy
PSCI 4607 [0.5]	Politics of North America
PSCI 4608 [0.5]	European Integration and European Security
PSCI 4609 [0.5]	Selected Topics in European Integration Studies
PSCI 4800 [0.5]	Advanced International Relations Theory
PSCI 4801 [0.5]	Selected Problems in Global Politics
PSCI 4803 [0.5]	Foreign Policies of Major East Asian Powers

PSCI 4805 [0.5]	Political Economy of Global Money and Finance
PSCI 4806 [0.5]	Transatlantic Security Issues
PSCI 4807 [0.5]	Politics of Citizenship and Migration
PSCI 4817 [0.5]	International Politics of Forced Migration

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits **20.0**

Specialization in Global Religions: Identity and Community

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in Core Courses 4.5

GINs 1000 [0.5]	Global History
GINs 1010 [0.5]	International Law and Politics
GINs 1020 [0.5]	Ethnography, Globalization and Culture
GINs 2000 [0.5]	Ethics and Globalization
GINs 2010 [0.5]	Globalization and International Economic Issues
GINs 2020 [0.5]	Global Literatures
GINs 3010 [0.5]	Global and International Theory
GINs 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINs 4090 [0.5]	Honours Seminar in Global and International Studies

2. 0.0 credit in:

GINs 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization 7.5

a. 1.5 credits in Global Religious Studies Core

RELI 1741 [0.5]	Global Religions: Identity and Community
RELI 2741 [0.5]	Big Questions in Religious Studies
RELI 3741 [0.5]	Classical Approaches to Religion

b. 1.0 credit from Foundations in Judaism, Christianity, and Islam (no more than 0.5 credit at the 1000 level)

RELI 1710 [0.5]	Judaism, Christianity, Islam
RELI 2110 [0.5]	Judaism
RELI 2121 [0.5]	Hebrew Bible
RELI 2200 [0.5]	Christianity
RELI 2220 [0.5]	Early Christianity
RELI 2230 [0.5]	Global Christianity
RELI 2310 [0.5]	Islam
RELI 2330 [0.5]	The Qur'an
RELI 2350 [0.5]	Classical Islamic Thought
RELI 2355 [0.5]	Islamic Ethics
RELI 2735 [0.5]	Greek Religion
RELI 2737 [0.5]	Roman Religion

c. 1.0 credit from Foundations in Asian or Indigenous Religions (no more than 0.5 credit at the 1000 level)

RELI 1712 [0.5]	Religions of South and East Asia
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RELI 2410 [0.5]	Buddhism
RELI 2510 [0.5]	Hinduism
RELI 2720 [0.5]	Indigenous Religions of Canada
RELI 2750 [0.5]	Sikhism
RELI 2800 [0.5]	Indigenous Traditions
d. 1.0 credit in Advanced Traditions and Contexts	
RELI 3140 [0.5]	The Holocaust: Historical and Religious Dimensions
RELI 3220 [0.5]	Reformation Europe
RELI 3230 [0.5]	Jesus of Nazareth
RELI 3231 [0.5]	Paul of Tarsus
RELI 3232 [0.5]	Christian Discipline
RELI 3250 [0.5]	Evangelical Christianity in Social-Historical Perspective
RELI 3330 [0.5]	Sufism
RELI 3340 [0.5]	The Life and Image of Muhammad
RELI 3420 [0.5]	Early Buddhism
RELI 3422 [0.5]	Buddhism Beyond India
RELI 3520 [0.5]	Early Hinduism
RELI 3522 [0.5]	Modern Hinduism
RELI 3732 [0.5]	Studies in Greek Art
RELI 3733 [0.5]	Studies in Roman Art
e. 1.5 credits from Comparative and Global Religion (at least 0.5 credit at the third-year level)	
RELI 2535 [0.5]	Religion and Gender
RELI 2711 [0.5]	Love and Its Myths
RELI 2712 [0.5]	Religious Diversity of Canada
RELI 2713 [0.5]	Mystical and Contemplative Traditions
RELI 2732 [0.5]	Death and Afterlife
RELI 2736 [0.5]	Religion and Society
RELI 2810 [0.5]	Special Topics in Religion and Popular Culture
RELI 2811 [0.5]	Religions and the Environment
RELI 2840 [0.5]	Topics in Religion
RELI 3000 [0.5]	Religion and Public Life
RELI 3101 [0.5]	Special Topics in Religions and the Body
RELI 3722 [0.5]	Religion and Violence
RELI 3840 [0.5]	Topics in Religion
RELI 3850 [0.5]	Topics in the Study of Religion Abroad
f. 1.5 credits from Honours Seminars and Honours Research Essay:	
RELI 4741 [0.5]	Contemporary Issues in the Study of Religion
and	
1.0 credit in RELI at the 4000 level	
B. Credits Not Included in the Major CGPA (8.0 credits)	
4. 8.0 credits in free electives	8.0
C. Additional Requirements	
5. The International Experience requirement must be met.	
6. The Language requirement must be met.	
Total Credits	20.0

Specialization in Globalization and the Environment

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in:		4.5
GINs 1000 [0.5]	Global History	
GINs 1010 [0.5]	International Law and Politics	
GINs 1020 [0.5]	Ethnography, Globalization and Culture	
GINs 2000 [0.5]	Ethics and Globalization	
GINs 2010 [0.5]	Globalization and International Economic Issues	
GINs 2020 [0.5]	Global Literatures	
GINs 3010 [0.5]	Global and International Theory	
GINs 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINs 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation		
GINs 1300 [0.0]	International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization		
a. 0.5 credit from: Foundations I		0.5
ENST 1000 [0.5]	Introduction to Environmental Studies	
OR		
GEOG 1020/ ENST 1020 [0.5]	People, Places and Environments	
b. 1.0 credit in: Foundations II		1.0
GEOG 1010 [0.5]	Global Environmental Systems	
GEOG 2200 [0.5]	Global Connections	
c. 1.5 credits from: Globalization		1.5
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3024 [0.5]	Understanding Globalization	
GEOG 3025 [0.5]	Geographies of Selected Regions	
GEOG 3030 [0.5]	Regional Field Excursion	
GEOG 3404 [0.5]	Geographies of Economic Development	
d. 2.0 credits from: Global Environment		2.0
ANTH 3355 [0.5]	Anthropology and the Environment	
GEOG 2500/ ENST 2500 [0.5]	Climate Change: Social Science Perspectives	
GEOG 3022/ ENST 3022 [0.5]	Environmental and Natural Resources	
GEOG 3206 [0.5]	Health, Environment, and Society	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
HUMR 3503 [0.5]	Global Environmental Justice	
PSCI 3801 [0.5]	Environmental Politics	
TSES 3002 [0.5]	Energy and Sustainability	
e. 1.0 credit in: Research Methodologies		1.0
GEOG 2005/ ENST 2005 [0.5]	Introduction to Qualitative Research	
GEOG 2006/ ENST 2006 [0.5]	Introduction to Quantitative Research	

f. 1.5 credits from: Honours Seminars	1.5
GEOG 4005/ ENST 4005 [0.5]	Directed Studies in Geography (topic in Global Environmental Issues)
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change
GEOG 4023 [0.5]	Seminar in Special Topics on the City
GEOG 4024 [0.5]	Seminar in Globalization
GEOG 4909 [1.0]	Honours Research Thesis (topic in Globalization and the Environment)
PSCI 4808 [0.5]	Global Environmental Politics
B. Credits Not Included in the Major CGPA (8.0 credits)	
4. 8.0 credits in: free electives	8.0
C. Additional Requirements	
5. The International Experience requirement must be met.	
6. The Language requirement must be met.	
Total Credits	20.0

Specialization in Globalization, Culture and Power

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0]	International Experience Requirement Preparation
3. 7.5 credits in: the Specialization	7.5
a. 2.0 credits in: Foundations	
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
or ANTH 1002 [0.5]	Introduction to Issues in Anthropology
ANTH 2001 [1.0]	Foundations in Socio-Cultural Anthropology
ANTH 3005 [0.5]	Ethnographic Research Methods
b. 1.0 credit from: Culture and Globalization	
ANTH 2850 [0.5]	Development and Underdevelopment
ANTH 3010 [0.5]	Language, Culture, and Globalization
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3040 [0.5]	The Global Middle Class
ANTH 3045 [0.5]	Children and Childhood in a Globalized World
GEOG 2300 [0.5]	Space, Place and Culture

GEOG 3021 [0.5]	Geographies of Culture and Identity
c. 1.0 credit from: Ethnography	
ANTH 2610 [0.5]	Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa
ANTH 2630 [0.5]	Studies in Asian Societies: Current Issues in Anthropological Research
ANTH 2635 [0.5]	Tradition and Modernity in the Pacific
ANTH 2640 [0.5]	Andean Ethnography
ANTH 2645 [0.5]	The Postcolonial Middle East
ANTH 2650 [0.5]	Ethnography of Mesoamerica
ANTH 2660 [0.5]	Ethnography of North Africa
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 2680 [0.5]	Anthropology of "Mainstream" North America
ANTH 2690 [0.5]	Ethnography of a Selected Area
d. 2.0 credits from: Topical Explorations in Anthropology	
ANTH 2020 [0.5]	Race and Ethnicity
ANTH 2040 [0.5]	Anthropology and Gender
ANTH 2060 [0.5]	Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
ANTH 2080 [0.5]	Humans/Animals: the More-than- Human in Social Research
ANTH 2510 [0.5]	Theories of Human Nature
ANTH 3007 [0.5]	History of Anthropological Theory
ANTH 3008 [0.5]	Contemporary Theories in Anthropology
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3025 [0.5]	Anthropology and Human Rights
ANTH 3310 [0.5]	Studies in Medical Anthropology
ANTH 3355 [0.5]	Anthropology and the Environment
ANTH 3550 [0.5]	Studies in Visual Anthropology
ANTH 3570 [0.5]	Studies in Art, Culture and Society
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 3800 [0.5]	Studies in Applied and Participatory Anthropology
ANTH 4007 [0.5]	Advanced Studies in Anthropological Theory and Methods
ANTH 4020 [0.5]	Advanced Studies in Race and Ethnicity
ANTH 4215 [0.5]	Selected Topics in Anthropology
ANTH 4225 [0.5]	Selected Topics in Anthropology
ANTH 4500 [0.5]	Advanced Studies in Culture and Symbols
ANTH 4550 [0.5]	Advanced Studies in Visual Anthropology
ANTH 4570 [0.5]	Political Anthropology
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
e. 1.5 credits from Core Honours Seminars	

ANTH 4005 [0.5]	Health and Globalization	
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology	
ANTH 4109 [0.5]	Ethnography, Gender and Globalization	
ANTH 4355 [0.5]	Anthropology of Natural Resources	
ANTH 4560 [0.5]	Economic Anthropology	
ANTH 4590 [1.0]	Capstone Seminar in Globalization, Culture, and Power	
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship	

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 Credits in: Free Electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Specialization in International Economic Policy

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. **4.5 credits in:** Core Courses 4.5

GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	

2. **0.0 credit in:** International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation	
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3. **7.5 credits in:** the Specialization

a. 1.0 credit in: Foundations 1.0

ECON 1001 [0.5]	Introduction to Microeconomics & ECON 1002 [0.5]	Introduction to Macroeconomics
or		
FYSM 1003 [1.0]	Introduction to Economics	

b. 0.5 credit in: Microeconomics 0.5

ECON 2001 [0.5]	Intermediate Microeconomics for Non-Mathematical Majors
or ECON 2009 [0] Managerial Economics	
or ECON 2020 [0] Intermediate Microeconomics I: Producers and Market Structure	

c. 0.5 credit in: Macroeconomics 0.5

ECON 2101 [0.5]	Intermediate Macroeconomics for Non-Mathematical Majors
or ECON 2102 [0] Intermediate Macroeconomics I	

d. 0.5 credit in: Research Methodologies 0.5

IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis
or ECON 2210 [0] Introductory Statistics for Economics	

e. 2.0 credits in: International and Public Economics 2.0

ECON 3403 [0.5]	Introduction to Public Economics: Expenditures
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ECON 3405 [0.5]	Introduction to Public Economics: Taxation
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ECON 3601 [0.5]	Introduction to International Trade
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ECON 3602 [0.5]	International Monetary Problems
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f. 3.0 credits from: International Economic Policy 3.0

ECON 3370 [0.5]	The Economics of Migration
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ECON 3508 [0.5]	Introduction to Economic Development
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ECON 3509 [0.5]	Development Planning and Project Evaluation
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ECON 3510 [0.5]	African Economic Development
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ECON 3803 [0.5]	The Economics of Natural Resources
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ECON 3804 [0.5]	Environmental Economics
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ECON 3807 [0.5]	European Economic Integration
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ECON 3808 [0.5]	The Economics of Transition
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ECON 3860 [0.5]	Agricultural Economics
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ECON 3870 [0.5]	Comparative Economic Systems
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Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent.

B. Credits Not Included in the Major CGPA (8.0 credits)

4. **8.0 credits in:** Free Electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Specialization in Latin American and Caribbean Studies

B.G.In.S. Honours (20.0 credits)

A. Credits Included in Major CGPA (12.0 credits)

1. **4.5 credits in:** Core Courses 4.5

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies

2. **0.0 credit in:** International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. **7.5 credits in:** the Specialization 7.5

Note: Language Requirement - Students choosing the Latin America and Caribbean Studies Specialization must fulfil their language requirement with a language relevant to Latin America and the Caribbean other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

a. 1.0 credit in : Foundations	
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II
b. 1.0 credit from: History	
HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 4704 [0.5]	Caribbean and Latin American History
c. 0.5 credit from: Politics	
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
d. 3.0 credits from: Courses with LACS Content	
ANTH 2640 [0.5]	Andean Ethnography
ANTH 2650 [0.5]	Ethnography of Mesoamerica
ANTH 4730 [0.5]	Colonialism and Post-Colonialism
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3025 [0.5]	Geographies of Selected Regions
GEOG 3030 [0.5]	Regional Field Excursion
GINS 3900 [0.5]	International Placement
GINS 4900 [0.5]	Tutorial in Global and International Studies
GINS 4908 [1.0]	Honours Research Essay
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3712 [0.5]	Mexico: Aztecs to Narcos
HIST 3713 [0.5]	Gender and Sexuality in Latin America
HIST 4700 [1.0]	Seminar in World History
HIST 4915 [0.5]	Topics in History (topics in LACS)
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies (if not used toward Item f. Capstone Seminar, below)
LACS 4819 [0.5]	Latin America and the World (if not used toward Item f. Capstone Seminar, below)
SOCI 4730 [0.5]	Colonialism and Post-Colonialism
e. 1.5 credits from: Context	
ANTH 2020 [0.5]	Race and Ethnicity
ANTH 2040 [0.5]	Anthropology and Gender
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 2850 [0.5]	Development and Underdevelopment
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples

ECON 3508 [0.5]	Introduction to Economic Development
ECON 4507 [0.5]	The Economics of Development
ECON 4508 [0.5]	International Aspects of Economic Development
ENGL 3965 [0.5]	Intro to Postcolonial Theory
ENGL 3972 [0.5]	Studies in Postcolonial Literature
ENGL 4802 [0.5]	Race, Ethnicity and Canadian Lit.
ENGL 4947 [0.5]	Issues in Diaspora Literature
ENGL 4975 [0.5]	Issues in Postcolonial Theory
ENGL 4976 [0.5]	Issues in Postcolonial Literature
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3024 [0.5]	Understanding Globalization
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
GEOG 4024 [0.5]	Seminar in Globalization
HIST 3217 [0.5]	Empire and Globalization
HUMR 2202 [0.5]	Power Relations and Human Rights
HUMR 2401 [0.5]	Political Repression
HUMR 3501 [0.5]	Social, Economic and Cultural Rights
HUMR 3503 [0.5]	Global Environmental Justice
HUMR 4201 [0.5]	Citizenship and Human Rights
LAWS 3208 [0.5]	International Trade Regulation
MGDS 2000 [0.5]	Global Migration and Transnationalism
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3105 [0.5]	Imperialism
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
PSCI 4105 [0.5]	Selected Problems in Development in the Global South
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4505 [0.5]	Transitions to Democracy
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3027 [0.5]	Globalization and Human Rights
f. 0.5 credit in: Capstone Seminar	
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies
LACS 4819 [0.5]	Latin America and the World
PSCI 4819 [0.5]	Latin America and the World

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Specialization in Teaching English in Global Contexts

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: 4.5

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization

a. 1.0 credit in: Foundations 1.0

ALDS 1001 [0.5]	Language Matters: Introduction to ALDS
LING 1001 [0.5]	Introduction to Linguistics I

b. 1.5 credits in: Language Analysis 1.5

ALDS 2201 [0.5]	Analysis of Oral Language Use
ALDS 2202 [0.5]	Analysis of Written Language Use
ALDS 2203 [0.5]	Linguistic Theory and Second-Language Learning

c. 2.5 credits from: Language Teaching Electives 2.5

ALDS 2704 [0.5]	Bilingualism
ALDS 2705 [0.5]	Language and Power
ALDS 3201 [0.5]	Cross-Cultural Communication
ALDS 3202 [0.5]	Sociolinguistics
ALDS 3405 [0.5]	Second Language Writing
ALDS 3701 [0.5]	Corpus Linguistics
ALDS 4201 [0.5]	Language Testing
ALDS 4306 [0.5]	Teaching English as a Second Language: Methodology II
ALDS 4308 [0.5]	English for Specific Purposes
ALDS 4709 [0.5]	Systemic-Functional Linguistics

d. 1.5 credits in: Language Acquisition 1.5

ALDS 3205 [0.5]	English as a Global Language
ALDS 4602 [0.5]	Second Language Acquisition
ALDS 4801 [0.5]	Major Structures of English

e. 1.0 credits in: Language Teaching 1.0

ALDS 4209 [0.5]	Teaching English as a Foreign Language: Methodology for Global Contexts
ALDS 4305 [0.5]	Teaching English Language: Methodology I

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Streams

Stream in Africa and Globalization

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture

GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues

GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

Note: Language Requirement -- Students choosing the Africa and Globalisation Stream must fulfill their language requirement with a language relevant to Africa other than English. The Program Director will maintain a list of those languages suitable for this requirement.

a. Foundations

AFRI 1001 [0.5]	Introduction to African Studies I
AFRI 1002 [0.5]	Introduction to African Studies II

b. African Regions

AFRI 2002 [0.5]	The Horn of Africa
AFRI 2003 [0.5]	The Great Lakes Region of Africa
AFRI 2004 [0.5]	North Africa
AFRI 2005 [0.5]	West Africa
AFRI 2006 [0.5]	Southern Africa

c. Intermediate African Studies

AFRI 3001 [0.5]	Globalization and Popular Culture in Africa
AFRI 3002 [0.5]	Regions in Africa: Cultures, Society, Politics
AFRI 3003 [0.5]	African Social and Political Thought
AFRI 3004 [0.5]	The African City
AFRI 3005 [0.5]	African Migrations and Diasporas
AFRI 3007 [0.5]	Special Topic in African Studies
AFRI 3200 [0.5]	Thematic Topic

d. African Experience

AFRI 3100 [0.5]	African Studies Abroad: Selected Topics
AFRI 3900 [0.5]	Placement

e. History

HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
HIST 2707 [0.5]	Modern Africa
HIST 3717 [0.5]	Gender and Sexuality in Africa
HIST 3906 [0.5]	Topics in World History (African topic)

f. Politics

PSCI 3100 [0.5]	Politics of Development in Africa
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PSCI 3101 [0.5]	Politics of War in Africa	
g. Anthropology		
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa	
ANTH 2660 [0.5]	Ethnography of North Africa	
h. Literature and Culture		
AFRI 3609 [0.5]	African Cinema	
AFRI 3916 [0.5]	Spoken Word Poetry Workshop	
ENGL 2926 [0.5]	African Literatures I	
ENGL 2927 [0.5]	African Literatures II	
FREN 4212 [0.5]	Littératures francophones	
MUSI 4105 [0.5]	Study of Musics in Africa	
i. African Diaspora		
ENGL 2957 [0.5]	Literatures of the Americas II	
ENGL 3940 [0.5]	Studies in Diaspora Lit.	
HIST 2710 [0.5]	Introduction to Caribbean History	
HIST 3406 [0.5]	African-American Women	
HIST 3710 [0.5]	Themes in Caribbean History	
MUSI 2005 [0.5]	Introduction to Jazz History	
B. Credits Not Included in the Major CGPA (7.0 credits)		
3. 7.0 credits in	free electives	7.0
C. Additional Requirements		
4. The language requirement must be met.		
Total Credits		15.0

Stream in Europe and Russia in the World B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):		
1. 4.0 credits in: Core Courses 4.0		
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream 4.0		
a. 0.5 credit in: Foundations		
EURR 1001 [0.5]	Introduction to European and Russian Studies	
b. 1.0 credit in: Core Politics, Society, and International Affairs		
EURR 2001 [0.5]	Current Issues in European Politics and Society	
EURR 2002 [0.5]	Europe and Russia in the World	
c. 2.5 credits from: Approved Courses in European, Russian, and Eurasian Studies. May include:		
EURR 3001 [0.5]	Literature and Culture in Europe	
EURR 3002 [0.5]	Literature and Culture in Russia and Eurasia	
B. Credits Not Included in the Major CGPA (7.0 credits):		
3. 7.0 credits in:	Free Electives	7.0
C. Additional Requirements		

4. The BGINS Language requirement must be met in a regional language relevant to Europe and Russia other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

Total Credits 15.0

Approved Courses in European, Russian, and Eurasian Studies

This list includes categories of approved courses that fulfill specific program requirements for all undergraduate programs in the Institute of European, Russian, and Eurasian Studies (EURUS). Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Modern History

HIST 2207 [1.0]	Nineteenth-Century Europe
HIST 2502 [0.5]	Modern Britain
HIST 2508 [0.5]	War, Politics, and Society in Twentieth-Century Global France
HIST 2510 [0.5]	19th-Century Germany
HIST 2511 [0.5]	20th-Century Germany
HIST 2600 [1.0]	History of Russia
HIST 2802 [0.5]	War and Society in Modern Europe, 1789-1914
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950
HIST 3113 [0.5]	Revolution and Society in France, 1789-1799
HIST 3115 [0.5]	Childhood and Youth in History
HIST 3217 [0.5]	Empire and Globalization
HIST 3604 [0.5]	Gender and Sexuality in Modern Europe
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions
HIST 3800 [0.5]	International History 1914-41
HIST 3801 [0.5]	International History 1941-90
HIST 3902 [0.5]	Topics in European History

Politics and Economics

ECON 3807 [0.5]	European Economic Integration
ECON 3808 [0.5]	The Economics of Transition
PSCI 3105 [0.5]	Imperialism
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3608 [0.5]	Migration Governance

Language, Art, Culture

GERM, ITAL, PORT, RUSS, SPAN or other approved course in a regional language at the 3000- or 4000-level or courses from the list below:

ARTH 1100 [0.0]	Art and Society: Prehistory to the Renaissance
ARTH 1101 [0.0]	Art and Society: Renaissance to the Present
ARTH 2202 [0.5]	Medieval Architecture and Art
ARTH 2300 [0.5]	Italian Renaissance Art

ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	COMS 2700 [0.5]	Global Media and Communication
ARTH 2404 [0.5]	Art of the 17th and 18th Centuries	COMS 3109 [0.5]	Communication, Culture and Identity
ARTH 2502 [0.5]	Art of the 19th Century	ECON 3600 [0.5]	Introduction to International Economics
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	ECON 3601 [0.5]	Introduction to International Trade
ARTH 3710 [0.5]	Architecture and Empire	ECON 3602 [0.5]	International Monetary Problems
FILM 2606 [0.5]	History of World Cinema I	ECON 3870 [0.5]	Comparative Economic Systems
FILM 2607 [0.5]	History of World Cinema II	FYSM 1603 [1.0]	Full-Year Seminar in European and Russian Studies
FREN 2100 [1.0]	French 4	FYSM 1614 [0.5]	One-Term Seminar in European and Russian Studies
FREN 2110 [1.0]	French 4: Writing	GEOG 2023 [0.5]	Cities, Inequality and Urban Change
FREN 2202 [0.5]	Introduction aux études littéraires 1	GEOG 2200 [0.5]	Global Connections
FREN 3212 [0.5]	Des manuscrits aux belles-lettres : de la littérature médiévale à l'humanisme	GEOG 2300 [0.5]	Space, Place and Culture
FREN 3213 [0.5]	Du Baroque aux Lumières	GEOG 2500 [0.5]	Climate Change: Social Science Perspectives
FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950	GEOG 3021 [0.5]	Geographies of Culture and Identity
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature	GEOG 3023 [0.5]	Cities in a Global World
HIST 3005 [0.5]	Medieval Aristocratic Life	GEOG 3404 [0.5]	Geographies of Economic Development
HIST 3006 [0.5]	Medieval Religious Life	GINS 3930 [0.5]	Carleton International Placement
HIST 3007 [0.5]	Medieval Intellectual Life	GINS 3931 [1.0]	Carleton International Placement
HIST 3105 [0.5]	Renaissance Europe	HIST 1001 [1.0]	The Making of Europe
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present	HIST 1002 [1.0]	Europe in the 20th Century
MUSI 2102 [0.5]	Music in an Age of Spectacle, Commerce, and Colonization	HIST 2811 [0.5]	Public History from Memory to Museums
MUSI 2103 [0.5]	Music in an Age of Order, Invention, and Revolution	HIST 3809 [0.5]	Historical Representations
MUSI 3400 [0.5]	A History of Opera before 1800	HIST 3810 [0.5]	Historical Theory
MUSI 3401 [0.5]	A History of Opera from 1800 to 1945	HIST 3812 [0.5]	Digital History
PHIL 1610 [0.5]	Great Philosophical Ideas, Part 1	HIST 3813 [0.5]	Problems in Global and Transnational Histories
PHIL 1620 [0.5]	Great Philosophical Ideas, Part 2	IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis
PHIL 2005 [1.0]	Ancient Philosophy: The Search for Wisdom	IPAF 4900 [0.5]	Research Experience Course
PHIL 2101 [0.5]	History of Ethics	LAWS 2105 [0.5]	Social Justice and Human Rights
PHIL 2103 [0.5]	Philosophy of Human Rights	LAWS 2601 [0.5]	Public International Law
PHIL 2202 [0.5]	Topics in Marxist Philosophy	LAWS 3602 [0.5]	International Human Rights
PHIL 3002 [0.5]	17th Century Philosophy	LAWS 3604 [0.5]	International Organizations
PHIL 3003 [0.5]	18th Century Philosophy	LAWS 3207 [0.5]	International Transactions
PHIL 3005 [0.5]	19th Century Philosophy	MGDS 2000 [0.5]	Global Migration and Transnationalism
PHIL 3009 [0.5]	Topics in European Philosophy	PSCI 1200 [0.5]	Politics in the World
PHIL 3330 [0.5]	Topics in History of Social and Political Philosophy	PSCI 2101 [0.5]	Comparative Politics of the Global North
PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy	PSCI 2500 [0.5]	Gender and Politics
PSCI 2301 [0.5]	History of Political Thought I	PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2302 [0.5]	History of Political Thought II	PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3308 [0.5]	Modern Political Thought	PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 3312 [0.5]	Enlightenment Political Thought	PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
RELI 1710 [0.5]	Judaism, Christianity, Islam	PSCI 3107 [0.5]	The Causes of War
RELI 2110 [0.5]	Judaism	PSCI 3307 [0.5]	Politics of Human Rights
RELI 2121 [0.5]	Hebrew Bible	PSCI 3309 [0.5]	Modern Ideologies
RELI 2230 [0.5]	Global Christianity	PSCI 3600 [0.5]	International Institutions
RELI 2310 [0.5]	Islam		

Context and Methods for Regional Studies

PSCI 3703 [0.5]	Governing in the Global Economy
SOCI 2000 [0.5]	Foundations of Sociological Inquiry
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods
SOCI 2005 [1.0]	Histories of Sociological Thought
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 2045 [0.5]	Gender and Society
SOCI 2160 [0.5]	War and Society
SOCI 2702 [0.5]	Power and Social Change
WGST 2800 [0.5]	Intersectional Identities
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 3803 [0.5]	Feminisms and Transnationalism
EURUS 4000-level Honours Courses	
EURR 4002 [0.5]	Post-Soviet States and Societies
EURR 4003 [0.5]	Social and Political Perspectives in Europe
EURR 4008 [0.5]	Nationalism in Russia and Eurasia
EURR 4100 [0.5]	Nation-Building in Central and Eastern Europe
EURR 4101 [0.5]	The Balkans in Transition – 1918 to 1989
EURR 4102 [0.5]	The Balkans since 1989
EURR 4103 [0.5]	The Great Russian Novel
EURR 4104 [0.5]	European Integration and European Security
EURR 4106 [0.5]	Selected Topics in European Integration Studies
EURR 4107 [0.5]	Russia's Regional and Global Ambitions
EURR 4201 [0.5]	Special Topics in European Studies
EURR 4202 [0.5]	Special Topics in Russian and Eurasian Studies
EURR 4204 [0.5]	Central Europe, Past and Present
EURR 4205 [0.5]	Politics of Identity in Europe and the Russian Area
EURR 4206 [0.5]	Internship and Applied Policy Skills
EURR 4207 [0.5]	Politics of Central Eurasia
EURR 4208 [0.5]	Foreign Policies of Soviet Successor States
EURR 4209 [0.5]	Politics of the Caucasus and Caspian Basin
EURR 4302 [0.5]	EU Summer Study Abroad
EURR 4303 [0.5]	Contemporary Europe: From Postwar to the European Union
EURR 4304 [0.5]	Europe and International Migration
EURR 4305 [0.5]	Imperial Russia and the Russian Revolution
EURR 4306 [0.5]	The Soviet Union: Power and Culture
EURR 4704 [0.5]	The Business Environment in Europe
EURR 4908 [1.0]	Honours Essay
HIST 4100 [1.0]	Seminar in Early Modern European History
HIST 4200 [1.0]	Seminar in European History
HIST 4201 [0.5]	Modern European History
HIST 4600 [1.0]	Seminar in Russian History
PSCI 4103 [0.5]	The Modern State

PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4610 [0.5]	Politics of Migration Management

Stream in French and Francophone Studies B.G.In.S. (15.0 credits)

A. Credits included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses	4.0
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream

a. 3.0 credits in: Foundations	3.0
FYSM 1408 [1.0]	French on the World Stage ¹
FREN 2202 [0.5]	Introduction aux études littéraires 1
FREN 2203 [0.5]	Introduction aux études littéraires 2
FREN 2401 [1.0]	Introduction à la linguistique française
b. 1.0 credit in: French and Francophone Studies at the 3000-level	1.0
FREN 3213 [0.5]	Du Baroque aux Lumières
FREN 3214 [0.5]	Révolutions, avant-gardes et ruptures : du 19e siècle aux années 1950
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature
FREN 3414 [0.5]	Sociolinguistique du français
FREN 3415 [0.5]	Histoire du français

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in: Free Electives	7.0
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C. Additional Requirements

4. To satisfy the Language Requirement, students must complete FREN 2100 [1.0], or demonstrate equivalent proficiency.

Total Credits	15.0
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Notes:

1. Students exempted from FYSM 1408 in Item 2.a. must replace it with another 1.0 credit in FREN at the 2000 level or higher.

Stream in Global and Transnational History B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses	4.0
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures

GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from:	the Stream 4.0
a. Foundations	
HIST 1707 [1.0]	World History
b. Regional History	
HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2312 [0.5]	History of the Indian Ocean World
HIST 2506 [0.5]	Introduction to Women's and Gender History
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
HIST 2707 [0.5]	Modern Africa
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 2802 [0.5]	War and Society in Modern Europe, 1789-1914
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950
c. Themes in History	
HIST 2000 [1.0]	Medieval Europe
HIST 2204 [0.5]	Early Modern Europe 1350-1650
HIST 2206 [0.5]	Early Modern Europe 1600-1800
HIST 2809 [0.5]	The Historian's Craft
HIST 3001 [0.5]	History at the Movies
HIST 3106 [0.5]	Social History of Sexuality
HIST 3109 [0.5]	Social History of Alcohol
HIST 3111 [0.5]	History of Humanitarian Aid
HIST 3115 [0.5]	Childhood and Youth in History
HIST 3120 [0.5]	History of the Body
HIST 3216 [0.5]	The Scientific Revolution
HIST 3217 [0.5]	Empire and Globalization
HIST 3310 [0.5]	Animals in History
HIST 3304 [0.5]	Canada-United States Relations
HIST 3306 [0.5]	Canada's International Policies
HIST 3500 [0.5]	Migration and Diaspora in Canada
HIST 3510 [0.5]	Indigenous Peoples of Canada
HIST 3511 [0.5]	Themes in Indigenous History
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions
HIST 3715 [0.5]	Themes in South Asian History
HIST 3717 [0.5]	Gender and Sexuality in Africa
HIST 3800 [0.5]	International History 1914-41
HIST 3801 [0.5]	International History 1941-90
HIST 3809 [0.5]	Historical Representations
HIST 3810 [0.5]	Historical Theory
HIST 3820 [0.5]	Explorations in Historical Theory
HIST 3905 [0.5]	Topics in International History
HIST 3906 [0.5]	Topics in World History
HIST 3907 [0.5]	Transnational Topic
HIST 3908 [0.5]	Thematic Topic
d. Advanced Core	
HIST 3813 [0.5]	Problems in Global and Transnational Histories

B. Credits Not Included in the Major CGPA (7.0 credits):

3. 7.0 credits in free electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

**Stream in Global Development
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Foundations	
GINS 1100 [0.5]	Global Development
b. Anthropology	
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
or ANTH 1002 [0.5]	Introduction to Issues in Anthropology
ANTH 2850 [0.5]	Development and Underdevelopment
ANTH 3010 [0.5]	Language, Culture, and Globalization
ANTH 3025 [0.5]	Anthropology and Human Rights
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3040 [0.5]	The Global Middle Class
ANTH 3045 [0.5]	Children and Childhood in a Globalized World
ANTH 3355 [0.5]	Anthropology and the Environment
c. Economics	
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
ECON 3508 [0.5]	Introduction to Economic Development
ECON 3509 [0.5]	Development Planning and Project Evaluation
ECON 3510 [0.5]	African Economic Development
d. Geography	
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2200 [0.5]	Global Connections
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
d. Political Science	
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 3100 [0.5]	Politics of Development in Africa

PSCI 3204 [0.5]	Politics of Latin America
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3700 [0.5]	Government and Politics of South Asia

e. Research Methodologies

IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis
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B. Credits Not Included in the Major CGPA (7.0 credits)

3. **7.0 credits** in free electives 7.0

C. Additional Requirements

4. The Language requirements must be met.

Total Credits 15.0

**Stream in Global Genders and Sexualities
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits** in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits** from: the Stream 4.0

a. Foundations

SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
WGST 1808 [1.0]	Introduction to Feminist Social Transformation

b. Theorizing Bodies and Borders

CRST 2001 [0.5]	Introduction to Critical Race Studies
CRST 4001 [0.5]	Advanced Critical Race Studies
SXST 2102 [0.5]	Sexuality, Gender, and Security
SXST 3103 [0.5]	Sexuality and Disability
SXST 3104 [0.5]	Transnational Sexualities
SXST 3106 [0.5]	Queer(ing) Archives
WGST 2803 [0.5]	Body Matters: The Politics of Bodies
WGST 2811 [0.5]	Masculinities
WGST 3001 [0.5]	Theory and Research in Feminist Social Transformation

c. Advocacy and Activism

HUMR 2202 [0.5]	Power Relations and Human Rights
HUMR 2301 [0.5]	Human Rights and Sexualities
HUMR 3202 [0.5]	Human Rights and Resistance
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3806 [0.5]	Girlhoods
WGST 3807 [0.5]	Gendered Violence

WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies
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B. Credits Not Included in the Major CGPA (7.0 credits)

3. **7.0 credits** in free electives 7.0

C. Additional Requirements

4. The Language Requirement must be met.

Total Credits 15.0

**Stream in Global Inequalities and Social Change
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits** in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits** in: the Stream 4.0

a. 1.0 credit in: Foundations

SOCI 1001 [0.5]	Introduction to Sociology I
& SOCI 1002 [0.5]	Introduction to Sociology II

Or

SOCI 1003 [1.0]	Introduction to Sociological Perspectives
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b. 1.0 credit in: Research Methods

SOCI 2000 [0.5]	Foundations of Sociological Inquiry
and 0.5 credit from:	
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods
SOCI 3000 [0.5]	Descriptive Statistics in Social Research

c. 1.0 credit in: Theory

SOCI 2005 [1.0]	Histories of Sociological Thought
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d. 1.0 credit in: Global Inequalities and Social Change Electives at the 2000 or 3000 level

SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 2030 [0.5]	Work, Industry and Occupations
SOCI 2035 [0.5]	Technology, Culture and Society
SOCI 2040 [0.5]	Food, Culture and Society
SOCI 2045 [0.5]	Gender and Society
SOCI 2060 [0.5]	Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives
SOCI 2160 [0.5]	War and Society
SOCI 2170 [0.5]	Foundations in Social Justice
SOCI 2702 [0.5]	Power and Social Change
SOCI 2705 [0.5]	Popular Culture in the Digital Age
SOCI 2810 [0.5]	Selected Topics in Sociology
SOCI 2820 [0.5]	Selected Topics in Sociology
SOCI 3002 [0.5]	Inferential Statistics in Social Research

SOCI 3004 [0.5]	Qualitative Research: Approaches and Strategies
SOCI 3006 [0.5]	Thinking the Social: Theories and Approaches
SOCI 3010 [0.5]	Power, Oppression and Resistance
SOCI 3019 [0.5]	Sociology of International Migration
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3027 [0.5]	Globalization and Human Rights
SOCI 3030 [0.5]	Studies in Work, Industry and Occupations: Authority and Expertise
SOCI 3035 [0.5]	Science, Culture and Society: Social Studies of Science
SOCI 3038 [0.5]	Studies in Urban Sociology
SOCI 3040 [0.5]	Studies in the Sociology of Gender
SOCI 3044 [0.5]	Sociology of Sex and Sexuality
SOCI 3045 [0.5]	Children and Childhood in a Globalized World
SOCI 3160 [0.5]	Political Violence
SOCI 3170 [0.5]	Social Justice in Action
SOCI 3210 [0.5]	Selected Topics in Sociology
SOCI 3220 [0.5]	Selected Topics in Sociology
SOCI 3430 [0.5]	Studies in Collective Action and Social Movements
SOCI 3570 [0.5]	Studies in Art, Culture and Society
SOCI 3710 [0.5]	Introduction to Cultural Studies
SOCI 3805 [0.5]	Studies in Population

B. Credits Not Included in the Major CGPA (7.0 credits)	
3. 7.0 credits in: Free Electives	7.0
C. Additional Requirements	
4. The Language requirement must be met.	
Total Credits	15.0

Stream in Global Law and Social Justice B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)	
1. 4.0 credits in: Core Courses	4.0
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream	4.0
a. Foundations	
LAWS 1001 [0.5]	Introduction to Legal Studies 1
LAWS 1002 [0.5]	Introduction to Legal Studies 2
b. Research Methodologies	
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1
c. Second Year Core Courses	
HUMR 2001 [0.5]	Human Rights: Theories and Foundations
LAWS 2105 [0.5]	Social Justice and Human Rights

LAWS 2601 [0.5]	Public International Law
d. Third Year Core Courses	
LAWS 3602 [0.5]	International Human Rights
LAWS 3604 [0.5]	International Organizations
e. Global Law and Social Justice	
HUMR 3002 [0.5]	Right to the City
HUMR 3301 [0.5]	Racialization, Racism and Human Rights
HUMR 3302 [0.5]	Culture, Religion, and Women's Human Rights
HUMR 3401 [0.5]	Histories of Persecution and Genocide
HUMR 3501 [0.5]	Social, Economic and Cultural Rights
HUMR 3503 [0.5]	Global Environmental Justice
HUMR 3504 [0.5]	Public Health and Human Rights
LAWS 3207 [0.5]	International Transactions
LAWS 3208 [0.5]	International Trade Regulation
LAWS 3503 [0.5]	Equality and Discrimination
LAWS 3504 [0.5]	Law and Aboriginal Peoples
LAWS 3509 [0.5]	The Charter of Rights Topics
B. Credits Not Included in the Major CGPA (7.0 credits)	
3. 7.0 credits in: Free Electives	7.0
C. Additional Requirements	
4. The language requirement must be met.	
Total Credits	15.0

Stream in Global Literatures B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)	
1. 4.0 credits in: Core Courses	4.0
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from: the Stream	4.0
a. Foundations	
ENGL 1009 [0.5]	Literature in Global Context
ENGL 1010 [0.5]	Writing Essays about Literature
b. Methods	
ENGL 2005 [0.5]	Theory and Criticism
ENGL 3106 [1.0]	Theories and Critical Practices
ENGL 3605 [0.5]	Modern and Contemporary Literary Theory
ENGL 3965 [0.5]	Intro to Postcolonial Theory
c. Global Literatures at the 2000-level	
ENGL 2908 [0.5]	Celtic Literatures
ENGL 2920 [0.5]	Topics in Decolonization and Migration I
ENGL 2926 [0.5]	African Literatures I
ENGL 2927 [0.5]	African Literatures II

ENGL 2936 [0.5]	South Asian Literatures I
ENGL 2937 [0.5]	South Asian Literatures II
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II

d. Global Literatures at the 3000-level

ENGL 3805 [0.5]	Literature and Culture in Russia and Eurasia
ENGL 3930 [0.5]	Topics in Decolonization and Migration II
ENGL 3940 [0.5]	Studies in Diaspora Lit.
ENGL 3972 [0.5]	Studies in Postcolonial Literature

e. Context for Global Literatures

ENGL 2105 [0.5]	History of the English Language
ENGL 2700 [0.5]	American Literatures I
ENGL 2701 [0.5]	American Literatures II
ENGL 2802 [1.0]	Indigenous and Canadian Literatures

B. Credits Not Included in the Major CGPA (7.0 credits):

3. 7.0 credits in free electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

**Stream in Global Media and Communication
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Foundations

COMS 1001 [0.5]	Foundations in Communication and Media Studies
COMS 1002 [0.5]	Current Issues in Communication and Media
COMS 2700 [0.5]	Global Media and Communication

b. Introductory Theory and Methods

COMS 2003 [0.5]	Theoretical Foundations in Communication and Media Studies
COMS 2004 [0.5]	Introduction to Communication Research

c. Advanced Theory and Methods

COMS 3001 [0.5]	Quantitative Research in Communication
COMS 3002 [0.5]	Qualitative Research in Communication
COMS 3500 [0.5]	Current Issues in Communication and Media Theory

d. Advanced Core

COMS 3108 [0.5]	Media Industries and the Network Society
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COMS 3109 [0.5]	Communication, Culture and Identity
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COMS 3311 [0.5]	Media and Communication in Regional Contexts
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B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in: free electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

**Stream in Global Migration and Transnationalism
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits in the Stream 4.0

a. 1.0 credit from Foundations

ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
ANTH 1002 [0.5]	Introduction to Issues in Anthropology

ENGL 1009 [0.5]	Literature in Global Context
ENGL 1010 [0.5]	Writing Essays about Literature
FYSM 1408 [1.0]	French on the World Stage
GEOG 1020 [0.5]	People, Places and Environments
HIST 1707 [1.0]	World History
PSCI 1200 [0.5]	Politics in the World
PSCI 1501 [0.5]	Politics of Migration
SOCI 1001 [0.5]	Introduction to Sociology I
SOCI 1002 [0.5]	Introduction to Sociology II

b. 0.5 credit in Stream Core Course

MGDS 2000 [0.5]	Global Migration and Transnationalism
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c. 2.5 credits from Global Migration and Transnationalism Thematic Categories

- 1) Transnationalism in the Arts, Literature, and Music
- 2) Historical, Cultural, and Regional Contexts
- 3) Citizenship, Identity, and Rights
- 4) International Migration, Globalization, and Politics

Must include 0.5 credit in at least three of the four categories. Only 0.5 credit at the 1000 level. At least 1.0 credit must be at the 3000 level.

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Approved Courses in Global Migration and Transnationalism

This list contains approved courses in Global Migration and Transnationalism that fulfil the four thematic and 4000-level Honours requirements for the BGNs Global Migration and Transnationalism Stream and Specialization. Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Global Migration and Transnationalism Thematic Categories

- 1) Transnationalism in the Arts, Literature, and Music
- 2) Historical, Cultural, and Regional Contexts
- 3) Citizenship, Identity, and Rights
- 4) International Migration, Globalization, and Politics

Approved Courses in Global Migration and Transnationalism

1) Transnationalism in the Arts, Literature, and Music

AFRI 3609 [0.5]	African Cinema
ARTH 2003 [0.5]	Canadian Twentieth-Century and Contemporary Art
ARTH 2005 [0.5]	Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
ARTH 2006 [0.5]	Arts of the First Peoples: The Southwest, the West Coast and the Arctic
ARTH 2007 [0.5]	Asian Art
ARTH 2008 [0.5]	Inuit Art
ARTH 2107 [0.5]	Islamic Architecture and Art
ARTH 2108 [0.5]	Art Worlds
ARTH 3007 [0.5]	Modern Asian Art
ARTH 3008 [0.5]	Contemporary Chinese Art and Art History
ENGL 2920 [0.5]	Topics in Decolonization and Migration I
ENGL 2926 [0.5]	African Literatures I
ENGL 2927 [0.5]	African Literatures II
ENGL 2936 [0.5]	South Asian Literatures I
ENGL 2937 [0.5]	South Asian Literatures II
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
ENGL 3603 [0.5]	20th- and 21st-century Fiction
ENGL 3702 [0.5]	American Culture
ENGL 3930 [0.5]	Topics in Decolonization and Migration II
ENGL 3940 [0.5]	Studies in Diaspora Lit.
ENGL 3960 [0.5]	Studies in Indigenous Literature
ENGL 3965 [0.5]	Intro to Postcolonial Theory
ENGL 3972 [0.5]	Studies in Postcolonial Literature
EURR 3001 [0.5]	Literature and Culture in Europe
EURR 3002 [0.5]	Literature and Culture in Russia and Eurasia

FREN 3215 [0.5] Les ères du soupçon : contemporanéités de la littérature

MUSI 2005 [0.5] Introduction to Jazz History

MUSI 2008 [0.5] Music of the World's Peoples

MUSI 3106 [0.5] Popular Musics of the World

2) Historical, Cultural, and Regional Contexts

AFRI 1001 [0.5] Introduction to African Studies I

AFRI 1002 [0.5] Introduction to African Studies II

AFRI 3005 [0.5] African Migrations and Diasporas

ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research

EURR 1001 [0.5] Introduction to European and Russian Studies

EURR 2001 [0.5] Current Issues in European Politics and Society

EURR 2002 [0.5] Europe and Russia in the World

HIST 2304 [1.0] Social and Cultural History of Canada

HIST 2308 [0.5] Colonial Latin America

HIST 2309 [0.5] Modern Latin America

HIST 2312 [0.5] History of the Indian Ocean World

HIST 2706 [0.5] Ancient and Pre-Colonial Africa

HIST 2707 [0.5] Modern Africa

HIST 2710 [0.5] Introduction to Caribbean History

HIST 3111 [0.5] History of Humanitarian Aid

HIST 3209 [0.5] Canadian Urban History

HIST 3406 [0.5] African-American Women

HIST 3413 [0.5] The United States and Its Borderlands

HIST 3500 [0.5] Migration and Diaspora in Canada

HIST 3507 [0.5] An Immigrant's Guide to Canada

HIST 3510 [0.5] Indigenous Peoples of Canada

HIST 3511 [0.5] Themes in Indigenous History

HIST 3710 [0.5] Themes in Caribbean History

HIST 3712 [0.5] Mexico: Aztecs to Narcos

HIST 3714 [0.5] The Holocaust: Historical and Religious Dimensions

HIST 3715 [0.5] Themes in South Asian History

HIST 3813 [0.5] Problems in Global and Transnational Histories

LACS 1001 [0.5] Introduction to Latin American and Caribbean Studies I

LACS 1002 [0.5] Introduction to Latin American and Caribbean Studies II

RELI 1712 [0.5] Religions of South and East Asia

RELI 2110 [0.5] Judaism

RELI 2310 [0.5] Islam

RELI 2355 [0.5] Islamic Ethics

RELI 2410 [0.5] Buddhism

RELI 2510 [0.5] Hinduism

RELI 2720 [0.5] Indigenous Religions of Canada

RELI 2750 [0.5] Sikhism

RELI 3330 [0.5] Sufism

RELI 3422 [0.5] Buddhism Beyond India

RELI 3522 [0.5] Modern Hinduism

3) Citizenship, Identity, and Rights

ANTH 2020 [0.5] Race and Ethnicity

ANTH 3010 [0.5]	Language, Culture, and Globalization	GEOG 3021 [0.5]	Geographies of Culture and Identity
ANTH 3020 [0.5]	Studies in Race and Ethnicity	GEOG 3024 [0.5]	Understanding Globalization
ANTH 3025 [0.5]	Anthropology and Human Rights	GEOG 3700 [0.5]	Population Geography
ANTH 3027 [0.5]	Studies in Globalization and Human Rights	HIST 3217 [0.5]	Empire and Globalization
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples	HIST 3813 [0.5]	Problems in Global and Transnational Histories
BUSI 2702 [0.5]	Introduction to International Management	PSCI 1501 [0.5]	Politics of Migration
BUSI 3700 [0.5]	Cross-cultural Communication	PSCI 2102 [0.5]	Comparative Politics of the Global South
COMS 3109 [0.5]	Communication, Culture and Identity	PSCI 3100 [0.5]	Politics of Development in Africa
ECON 3380 [0.5]	The Economics of Gender and Ethnicity	PSCI 3101 [0.5]	Politics of War in Africa
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	PSCI 3102 [0.5]	Politics of Development of China
INDG 2011 [0.5]	Contemporary Indigenous Studies	PSCI 3105 [0.5]	Imperialism
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality	PSCI 3203 [0.5]	Government and Politics in the Middle East
INDG 3001 [0.5]	Indigenous Governance	PSCI 3608 [0.5]	Migration Governance
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	PSCI 3700 [0.5]	Government and Politics of South Asia
HUMR 3301 [0.5]	Racialization, Racism and Human Rights	SOCI 3019 [0.5]	Sociology of International Migration
HUMR 3302 [0.5]	Culture, Religion, and Women's Human Rights	SOCI 3805 [0.5]	Studies in Population
HUMR 3401 [0.5]	Histories of Persecution and Genocide	Approved 4000-level Honours Courses in Global Migration and Transnationalism	
LAWS 2105 [0.5]	Social Justice and Human Rights	AFRI 4000 [0.5]	Advanced Topics in African Studies
LAWS 2502 [0.5]	Law, State and Citizen	AFRI 4003 [0.5]	History of 'The African Child'
LAWS 3503 [0.5]	Equality and Discrimination	AFRI 4050 [0.5]	Selected Topics in African Studies
LAWS 3504 [0.5]	Law and Aboriginal Peoples	ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology
LAWS 3602 [0.5]	International Human Rights	ANTH 4020 [0.5]	Advanced Studies in Race and Ethnicity
PSCI 3702 [0.5]	Israeli-Palestinian Relations	ANTH 4109 [0.5]	Ethnography, Gender and Globalization
PSCI 3802 [0.5]	Globalization and Human Rights	ANTH 4200 [0.5]	War, Security and Citizenship
PSCI 3805 [0.5]	Politics of Race	ANTH 4730 [0.5]	Colonialism and Post-Colonialism
RELI 2712 [0.5]	Religious Diversity of Canada	ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship
RELI 2800 [0.5]	Indigenous Traditions	ARTH 4003 [0.5]	Topics in Contemporary Chinese Art
RELI 3101 [0.5]	Special Topics in Religions and the Body	ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art
SOCI 2020 [0.5]	Race and Ethnicity	ARTH 4007 [0.5]	Topics in Asian Art
SOCI 3020 [0.5]	Studies in Race and Ethnicity	ARTH 4008 [0.5]	Transnational Theory
SOCI 3027 [0.5]	Globalization and Human Rights	BUSI 4706 [0.5]	International Human Resource Management
SOCI 3805 [0.5]	Studies in Population	CDNS 4400 [0.5]	Space, Landscape and Identity in Canada
SOWK 3206 [0.5]	Community Development and Social Change in an International Context	CDNS 4500 [0.5]	Global Canada
SOWK 3207 [0.5]	Human Rights Practice in Civil Society	COMS 4316 [0.5]	Indigenous Media in Global Contexts
WGST 2800 [0.5]	Intersectional Identities	COMS 4603 [0.5]	Diaspora and Communication
WGST 2803 [0.5]	Body Matters: The Politics of Bodies	COMS 4605 [0.5]	Media, Race and Ethnicity
WGST 3803 [0.5]	Feminisms and Transnationalism	ENGL 4609 [0.5]	Global Stages and Theories
4) International Migration, Globalization, and Politics			
ANTH 2850 [0.5]	Development and Underdevelopment	ENGL 4802 [0.5]	Race, Ethnicity and Canadian Lit.
ECON 3370 [0.5]	The Economics of Migration	ENGL 4947 [0.5]	Issues in Diaspora Literature
GEOG 2200 [0.5]	Global Connections	ENGL 4960 [0.5]	Indigenous Literatures I
GEOG 2300 [0.5]	Space, Place and Culture	ENGL 4961 [0.5]	Indigenous Literatures II
		ENGL 4975 [0.5]	Issues in Postcolonial Theory
		ENGL 4976 [0.5]	Issues in Postcolonial Literature
		EURR 4207 [0.5]	Politics of Central Eurasia

EURR 4209 [0.5]	Politics of the Caucasus and Caspian Basin
EURR 4304 [0.5]	Europe and International Migration
FREN 4412 [0.5]	Diversité du français
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place
GEOG 4023 [0.5]	Seminar in Special Topics on the City
GEOG 4024 [0.5]	Seminar in Globalization
GINS 4908 [1.0]	Honours Research Essay
HIST 4700 [1.0]	Seminar in World History
HIST 4701 [0.5]	African History
HIST 4702 [0.5]	South Asian History
HIST 4703 [0.5]	The Global South
HIST 4704 [0.5]	Caribbean and Latin American History
HIST 4805 [1.0]	Seminar on a Transnational or Thematic Topic
HIST 4806 [0.5]	Global, Transnational, or Thematic History
HUMR 4201 [0.5]	Citizenship and Human Rights
HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World
HUMR 4404 [0.5]	Rights of Refugees and Displaced Persons
HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
INDG 4001 [0.5]	Indigeneity in the City
INDG 4011 [0.5]	Indigenous Representations
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies
LACS 4819 [0.5]	Latin America and the World
LAWS 4006 [0.5]	Religion and State in Canada
LAWS 4102 [0.5]	Controversies in Rights Theory
LAWS 4601 [0.5]	Transnational Law and Human Rights
LAWS 4606 [0.5]	International Law of Armed Conflict
LAWS 4607 [0.5]	Immigration and Refugee Law
MGDS 4900 [0.5]	Special Topics in Migration and Diaspora Studies
MUSI 4005 [0.5]	Issues in Jazz Studies
MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada
MUSI 4104 [0.5]	First Peoples Music in Canada
PSCI 4503 [0.5]	Politics of Central Eurasia
PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin
PSCI 4610 [0.5]	Politics of Migration Management
PSCI 4801 [0.5]	Selected Problems in Global Politics
PSCI 4807 [0.5]	Politics of Citizenship and Migration
PSCI 4817 [0.5]	International Politics of Forced Migration
PSCI 4819 [0.5]	Latin America and the World
RELI 4850 [0.5]	Seminar in the Study of Religion
SOCI 4043 [0.5]	Families in the 21st Century
SOWK 4103 [0.5]	Practice and Policy in Immigration

Stream in Global Politics B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses		4.0
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream		4.0
a. Core Courses		
GPOL 1500 [0.5]	Debates in Global Politics	
GPOL 2500 [0.5]	Debates in Comparative Politics	
GPOL 3000 [0.5]	Themes in Global and Comparative Politics	
b. Global Political Economy		
PSCI 2602 [0.5]	International Relations: Global Political Economy	
c. Political Science at the 2000 level		
PSCI 2002 [0.5]	Canadian Politics and Civil Society	
PSCI 2003 [0.5]	Canadian Political Institutions	
PSCI 2101 [0.5]	Comparative Politics of the Global North	
PSCI 2102 [0.5]	Comparative Politics of the Global South	
PSCI 2200 [0.5]	Introduction to U.S. Politics	
PSCI 2401 [0.5]	Public Affairs Analysis	
PSCI 2500 [0.5]	Gender and Politics	
d. Research Methodologies		
PSCI 2701 [0.5]	Introduction to Research Methods in Political Science	
PSCI 2702 [0.5]	Quantitative Research Methods in Political Science	
e. Global Politics Electives		
EURR 2001 [0.5]	Current Issues in European Politics and Society	
EURR 2002 [0.5]	Europe and Russia in the World	
PSCI 3100 [0.5]	Politics of Development in Africa	
PSCI 3101 [0.5]	Politics of War in Africa	
PSCI 3102 [0.5]	Politics of Development of China	
PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia	
PSCI 3105 [0.5]	Imperialism	
PSCI 3107 [0.5]	The Causes of War	
PSCI 3108 [0.5]	Politics of Popular Culture	
PSCI 3109 [0.5]	The Politics of Law and Morality	
PSCI 3200 [0.5]	U.S. Constitutional Politics	
PSCI 3203 [0.5]	Government and Politics in the Middle East	
PSCI 3204 [0.5]	Politics of Latin America	
PSCI 3205 [0.5]	Mexican Politics	
PSCI 3206 [0.5]	European Democracies	

PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3407 [0.5]	Public Opinion and Public Policy
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3601 [0.5]	Theories of International Politics
PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 3801 [0.5]	Environmental Politics
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 3805 [0.5]	Politics of Race

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in: Free Electives 7.0

c. Additional Requirements

4. The Language Requirement must be met.

Total Credits 15.0

Stream in Global Religions: Identity and Community

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Global Religious Studies Core

RELI 1741 [0.5]	Global Religions: Identity and Community
RELI 2741 [0.5]	Big Questions in Religious Studies
RELI 3741 [0.5]	Classical Approaches to Religion

b. Foundations in Judaism, Christianity, and Islam

RELI 1710 [0.5]	Judaism, Christianity, Islam
RELI 2110 [0.5]	Judaism
RELI 2121 [0.5]	Hebrew Bible
RELI 2200 [0.5]	Christianity

RELI 2220 [0.5]	Early Christianity
RELI 2230 [0.5]	Global Christianity
RELI 2310 [0.5]	Islam
RELI 2330 [0.5]	The Qur'an
RELI 2350 [0.5]	Classical Islamic Thought
RELI 2355 [0.5]	Islamic Ethics
RELI 2735 [0.5]	Greek Religion
RELI 2737 [0.5]	Roman Religion

c. Foundations in Asian or Indigenous Religions

RELI 1712 [0.5]	Religions of South and East Asia
RELI 2410 [0.5]	Buddhism
RELI 2510 [0.5]	Hinduism
RELI 2515 [0.5]	Religion and Aesthetics in India
RELI 2750 [0.5]	Sikhism
RELI 2720 [0.5]	Indigenous Religions of Canada
RELI 2800 [0.5]	Indigenous Traditions

d. Advanced Traditions and Contexts

RELI 3101 [0.5]	Special Topics in Religions and the Body
RELI 3140 [0.5]	The Holocaust: Historical and Religious Dimensions
RELI 3220 [0.5]	Reformation Europe
RELI 3230 [0.5]	Jesus of Nazareth
RELI 3231 [0.5]	Paul of Tarsus
RELI 3232 [0.5]	Christian Discipline
RELI 3250 [0.5]	Evangelical Christianity in Social-Historical Perspective
RELI 3330 [0.5]	Sufism
RELI 3340 [0.5]	The Life and Image of Muhammad
RELI 3360 [0.5]	Special Topics in Islamic Texts & Narratives

RELI 3420 [0.5]	Early Buddhism
RELI 3422 [0.5]	Buddhism Beyond India
RELI 3520 [0.5]	Early Hinduism
RELI 3522 [0.5]	Modern Hinduism
RELI 3732 [0.5]	Studies in Greek Art
RELI 3733 [0.5]	Studies in Roman Art

e. Comparative and Global Religion

RELI 2535 [0.5]	Religion and Gender
RELI 2711 [0.5]	Love and Its Myths
RELI 2712 [0.5]	Religious Diversity of Canada
RELI 2713 [0.5]	Mystical and Contemplative Traditions
RELI 2732 [0.5]	Death and Afterlife
RELI 2736 [0.5]	Religion and Society
RELI 2738 [0.5]	Philosophy of Religion
RELI 2840 [0.5]	Topics in Religion
RELI 3722 [0.5]	Religion and Violence
RELI 3840 [0.5]	Topics in Religion
RELI 3850 [0.5]	Topics in the Study of Religion Abroad

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in free electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Stream in Globalization and the Environment B.G. In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Foundations

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 1020/ ENST 1020 [0.5]	People, Places and Environments
GEOG 2200 [0.5]	Global Connections

b. Globalization

GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3024 [0.5]	Understanding Globalization
GEOG 3025 [0.5]	Geographies of Selected Regions
GEOG 3404 [0.5]	Geographies of Economic Development

c. Global Environment

ANTH 3355 [0.5]	Anthropology and the Environment
GEOG 2500/ ENST 2500 [0.5]	Climate Change: Social Science Perspectives
GEOG 3022/ ENST 3022 [0.5]	Environmental and Natural Resources
GEOG 3206 [0.5]	Health, Environment, and Society
GEOG 3209 [0.5]	Sustainability and Environment in the South
HUMR 3503 [0.5]	Global Environmental Justice
PSCI 3801 [0.5]	Environmental Politics
TSES 3002 [0.5]	Energy and Sustainability

d. Research Methodologies

GEOG 2005/ ENST 2005 [0.5]	Introduction to Qualitative Research
GEOG 2006/ ENST 2006 [0.5]	Introduction to Quantitative Research

B. Credits Not Included in the Major CGPA (7.0 credits):

3. 7.0 credits in: Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Stream in Globalization, Culture and Power B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits):

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture

GINS 2000 [0.5] Ethics and Globalization

GINS 2010 [0.5] Globalization and International Economic Issues

GINS 2020 [0.5] Global Literatures

GINS 3010 [0.5] Global and International Theory

GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Foundations

ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology

ANTH 1002 [0.5] Introduction to Issues in Anthropology

ANTH 2001 [1.0] Foundations in Socio-Cultural Anthropology

ANTH 3005 [0.5] Ethnographic Research Methods

b. Culture and Globalization

ANTH 2850 [0.5] Development and Underdevelopment

ANTH 3010 [0.5] Language, Culture, and Globalization

ANTH 3027 [0.5] Studies in Globalization and Human Rights

ANTH 3040 [0.5] The Global Middle Class

ANTH 3045 [0.5] Children and Childhood in a Globalized World

GEOG 2300 [0.5] Space, Place and Culture

GEOG 3021 [0.5] Geographies of Culture and Identity

c. Ethnography

ANTH 2610 [0.5] Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research

ANTH 2620 [0.5] Ethnography of Sub-Saharan Africa

ANTH 2630 [0.5] Studies in Asian Societies: Current Issues in Anthropological Research

ANTH 2635 [0.5] Tradition and Modernity in the Pacific

ANTH 2640 [0.5] Andean Ethnography

ANTH 2645 [0.5] The Postcolonial Middle East

ANTH 2650 [0.5] Ethnography of Mesoamerica

ANTH 2660 [0.5] Ethnography of North Africa

ANTH 2670 [0.5] Ethnography of Brazil

ANTH 2680 [0.5] Anthropology of "Mainstream" North America

ANTH 2690 [0.5] Ethnography of a Selected Area

d. Topical Explorations in Anthropology

ANTH 2020 [0.5] Race and Ethnicity

ANTH 2040 [0.5] Anthropology and Gender

ANTH 2060 [0.5] Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives

ANTH 2080 [0.5] Humans/Animals: the More-than-Human in Social Research

ANTH 2510 [0.5] Theories of Human Nature

ANTH 3007 [0.5] History of Anthropological Theory

ANTH 3008 [0.5]	Contemporary Theories in Anthropology
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3025 [0.5]	Anthropology and Human Rights
ANTH 3310 [0.5]	Studies in Medical Anthropology
ANTH 3355 [0.5]	Anthropology and the Environment
ANTH 3550 [0.5]	Studies in Visual Anthropology
ANTH 3570 [0.5]	Studies in Art, Culture and Society
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 3800 [0.5]	Studies in Applied and Participatory Anthropology

B. Credits Not Included in the Major CGPA (7.0 credits):

3. **7.0 credits in:** Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

**Stream in International Economic Policy
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits in:** Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from:** the Stream 4.0

a. Foundations

ECON 1001 [0.5]	Introduction to Microeconomics & ECON 1002 [0.5]	Introduction to Macroeconomics or FYSM 1003 [1.0]	Introduction to Economics
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b. Microeconomics

ECON 2001 [0.5]	Intermediate Microeconomics for Non-Mathematical Majors
or ECON 2009 [0.5]	Managerial Economics
or ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure

c. Macroeconomics

ECON 2101 [0.5]	Intermediate Macroeconomics for Non-Mathematical Majors
or ECON 2102 [0.5]	Intermediate Macroeconomics I

d. Research Methodologies

IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis
or ECON 2210 [0.5]	Introductory Statistics for Economics

e. International Economic Policy

ECON 3403 [0.5]	Introduction to Public Economics: Expenditures
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ECON 3405 [0.5]	Introduction to Public Economics: Taxation
ECON 3508 [0.5]	Introduction to Economic Development
ECON 3509 [0.5]	Development Planning and Project Evaluation
ECON 3510 [0.5]	African Economic Development
ECON 3601 [0.5]	Introduction to International Trade
ECON 3602 [0.5]	International Monetary Problems
ECON 3803 [0.5]	The Economics of Natural Resources
ECON 3804 [0.5]	Environmental Economics
ECON 3807 [0.5]	European Economic Integration
ECON 3808 [0.5]	The Economics of Transition
ECON 3860 [0.5]	Agricultural Economics
ECON 3870 [0.5]	Comparative Economic Systems

Note: To meet the prerequisite requirements for ECON 2009, ECON 2020, ECON 2102, and ECON 2210, students must have obtained a grade of C- or higher in ECON 1401 or MATH 1009 and a grade of C- or higher in FYSM 1003 or ECON 1000 or equivalent

B. Credits Not Included in the Major CGPA (7.0 credits)

3. **7.0 credits in:** Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

**Stream in Latin American and Caribbean Studies
B.G.In.S. (15.0 credits)**

Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits in:** Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from:** the Stream 4.0

Note: Language Requirement - Students choosing the Latin America and Caribbean Studies Stream must fulfil their language requirement with a language relevant to Latin America and the Caribbean other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

a. Foundations

LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II

b. History

HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2710 [0.5]	Introduction to Caribbean History

c. Politics

PSCI 3204 [0.5]	Politics of Latin America
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PSCI 3205 [0.5]	Mexican Politics
d. Courses with LACS Content	
ANTH 2640 [0.5]	Andean Ethnography
ANTH 2650 [0.5]	Ethnography of Mesoamerica
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3025 [0.5]	Geographies of Selected Regions
GEOG 3030 [0.5]	Regional Field Excursion
GINS 3900 [0.5]	International Placement
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3712 [0.5]	Mexico: Aztecs to Narcos
HIST 3713 [0.5]	Gender and Sexuality in Latin America
e. Context	
ANTH 2020 [0.5]	Race and Ethnicity
ANTH 2040 [0.5]	Anthropology and Gender
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 2850 [0.5]	Development and Underdevelopment
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ECON 3508 [0.5]	Introduction to Economic Development
ENGL 3965 [0.5]	Intro to Postcolonial Theory
ENGL 3972 [0.5]	Studies in Postcolonial Literature
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3024 [0.5]	Understanding Globalization
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
HIST 3217 [0.5]	Empire and Globalization
HUMR 2202 [0.5]	Power Relations and Human Rights
HUMR 2401 [0.5]	Political Repression
HUMR 3501 [0.5]	Social, Economic and Cultural Rights
HUMR 3503 [0.5]	Global Environmental Justice
LAWS 3208 [0.5]	International Trade Regulation
MGDS 2000 [0.5]	Global Migration and Transnationalism
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3105 [0.5]	Imperialism
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3802 [0.5]	Globalization and Human Rights
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 3020 [0.5]	Studies in Race and Ethnicity

SOCI 3027 [0.5]	Globalization and Human Rights
B. Credits Not Included in the Major CGPA (7.0 credits):	
3. 7.0 credits in:	Free Electives 7.0
C. Additional Requirements	
4. The Language requirement must be met.	
Total Credits	15.0

Stream in Teaching English in Global Contexts B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPS (8.0 credits)	
1. 4.0 credits in:	4.0
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
2. 4.0 credits from:	the Stream 4.0
a. Foundations	
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS
LING 1001 [0.5]	Introduction to Linguistics I
b. Language Analysis	
ALDS 2201 [0.5]	Analysis of Oral Language Use
ALDS 2202 [0.5]	Analysis of Written Language Use
ALDS 2203 [0.5]	Linguistic Theory and Second-Language Learning
c. Language Teaching and Acquisition	
ALDS 3201 [0.5]	Cross-Cultural Communication
ALDS 3205 [0.5]	English as a Global Language
ALDS 4602 [0.5]	Second Language Acquisition
ALDS 4801 [0.5]	Major Structures of English

B. Credits Not Included in the Major CGPA (7.0 credits)	
3. 7.0 credits in:	free electives 7.0
C. Additional Requirements	
4. The Language requirement must be met.	
Total Credits	15.0

B.G.In.S. Regulations

The regulations presented in this section apply to all Bachelor of Global and International Studies programs.

In addition to the program requirements and requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.G.In.S degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit of FYSM and can only register in a FYSM while they have

first-year standing in their B.G.In.S program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Change of Specialization or Stream Within the B.G.In.S Degree

Students may change specialization or stream, or change from/to specialization or stream within the B.G.In.S. during the first or subsequent years of study if, upon entry to the new specialization or stream, they would be in good academic standing.

Minors

Students may apply to the Registrar's Office to be admitted to a minor during their first or subsequent years of study. Acceptance into a minor is normally subject to meeting the minimum CGPA requirements described in Section 3.1.9 of the *Academic Regulations of the University*, as well as any specific requirements of the intended minor as published in the relevant Calendar entry. B.G.In.S. Honours students may take a maximum of one minor. B.G.In.S. students may take a maximum of two minors.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Global and International Studies: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Global and International Studies Honours program;
2. Obtained and maintained an overall CGPA of 9.5 or higher in the first two years of academic study;
3. Have obtained third-year standing;
4. Prior to the first work term, have successfully completed GINS 3010 and GINS 3020

Students in B.G.In.S must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: GINS 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the

demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Global and International Studies (B.G.In.S.) (Honours)
- Bachelor of Global and International Studies (B.G.In.S.)

Admission Requirements

First Year

B.G.In.S. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) and a FIF4U course for students applying to the Specialization in French and Francophone Studies. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

B.G.In.S.

No direct entry; access is restricted.

Advanced Standing

B.G.In.S. (Honours)

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and stream selected.

Students who have completed more than 7.0 credits of post-secondary study are not typically considered for transfer.

B.G.In.S.

No direct entry. Access is restricted to students in the B.G.In.S. (Honours) program who apply to transfer.

Global and International Studies (GINS) Courses

GINS 1000 [0.5 credit]

Global History

Introduction to political, social, cultural, economic and military developments in global and international history. Prerequisite(s): Enrolment in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 1010 [0.5 credit]

International Law and Politics

Introduction to the evolution of the international system, including the rise of the state, sovereignty, and the challenge of international cooperation. The role of international law in addressing global issues such as human rights, security and trade. Prerequisite(s): Enrolment in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 1020 [0.5 credit]

Ethnography, Globalization and Culture

Introduction to the intersection of globalization processes with social and cultural diversity as examined through ethnography and ethnographic methods. Topics may include cultural survival, growing economic inequality, ecological vulnerabilities, health practices, human rights, and shifting racialized, gendered, religious, ethnic, and national identities. Prerequisite(s): Enrolment in B.G.In.S. Lectures two hours a week, tutorials one hour a week.

GINS 1100 [0.5 credit]

Global Development

Introduction to key questions and issues in development studies, taught from an inter-disciplinary perspective. Lectures two hours a week, tutorials one hour a week.

GINS 1300 [0.0 credit]

International Experience Requirement Preparation

This mandatory course introduces BGIInS students to the International Experience Requirement (IER) and to the various policies and procedures associated with it. Graded SAT/UNS. Prerequisite(s): first-year standing in BGIInS. Online course.

GINs 2000 [0.5 credit]**Ethics and Globalization**

Introduction to global ethical issues, focusing on alternative lines of ethical argument. Topics may include poverty and unequal development, climate change, war and terrorism, reparations for colonialism and slavery, international relief services, ill effects of globalization, trafficking and forced labour, democracy and global governance.

Prerequisite(s): Second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINs 2010 [0.5 credit]**Globalization and International Economic Issues**

An introduction to the world economy, international trade and finance, and economic development. Social and economic implications for both rich and poor countries of lowered barriers to the international flows of goods, services, capital, labour, and information in the age of globalization.

Prerequisite(s): Second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINs 2020 [0.5 credit]**Global Literatures**

A study of the global dynamics of the contemporary literary imagination and literary production; literature as cultural practice; the politics of literary circulation; the politics of language and translation.

Prerequisite(s): second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINs 3010 [0.5 credit]**Global and International Theory**

Advanced analysis of global and international theories from a variety of perspectives, including realism, liberalism, postmodernism, constructivism, post-structuralism, literary and critical approaches.

Prerequisite(s): third-year standing in B.G.In.S.

Lectures three hours a week.

GINs 3020 [0.5 credit]**Places, Boundaries, Movements and Global Environmental Change**

Examination of the relationship between individual places and global social and environmental processes. The changing nature of regions, states and political boundaries in the context of political and economic globalization and international migration. Social science perspectives on climate change vulnerability, adaptation and mitigation.

Prerequisite(s): third-year standing in B.G.In.S.

Lectures three hours a week.

GINs 3100 [0.5 credit]**Global and International Group Project**

Student teams work on a project related to global and international studies. Lectures are devoted to discussing group project-related issues and student presentations. A project proposal, a series of project reports and oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lecture one hour per week, tutorials two hours per week.

GINs 3200 [0.5 credit]**Experiential Learning Abroad**

An experiential learning opportunity combining volunteer work abroad with classroom instruction on the Carleton campus. Through experiential engagement outside Canada, together with critical reflection, students will learn about the challenges and rewards of global engagement.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing.

Lecture two hours a week plus a three week experiential learning trip abroad.

GINs 3300 [0.5 credit]**Global and International Studies Abroad: Selected Topics**

Based at a partner university around the world, and taught by a Carleton faculty member, the course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in global and international studies. Topic and location will change annually.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and approval by the BGINs Program Director.

Three week intensive course.

GINs 3900 [0.5 credit]**International Placement**

Placement for six weeks with a global and international focus.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B.G.In.S.

GINs 3901 [1.0 credit]**International Placement**

Placement for twelve weeks with a global and international focus.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B.G.In.S.

GINS 3930 [0.5 credit]**Carleton International Placement**

Placement for six weeks with a global and international focus for students outside of the BGIInS Program.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3701, IPAF 3900 (no longer offered).

Prerequisite(s): Third-year standing and minimum CGPA of 9.0.

Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3931 [1.0 credit]**Carleton International Placement**

Placement for twelve weeks with a global and international focus for students outside of the BGIInS Program.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3702, IPAF 3901 (no longer offered).

Prerequisite(s): Third-year standing and minimum CGPA of 9.0.

Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

GINS 4090 [0.5 credit]**Honours Seminar in Global and International Studies**

Examination of key debates in global and international studies from a variety of disciplinary and interdisciplinary perspectives. Integration of knowledge from different areas of emphasis in global studies. A major research paper is required that undertakes to focus theoretical insight on practical concerns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in B.G.In.S. Seminar three hours a week.

GINS 4900 [0.5 credit]**Tutorial in Global and International Studies**

A tutorial on selected topics in which seminars are not available.

Prerequisite(s): fourth-year Honours standing in B.G.In.S. and permission of the Program Director.

GINS 4908 [1.0 credit]**Honours Research Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. B.G.In.S. regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in B.G.In.S. with a CGPA of 9.00 or higher, or permission of the Program Director.

Global Development (B.G.In.S. Specialization and Stream)

This section presents the requirements for programs in:

- Specialization in Global Development B.G.In.S. Honours
- Stream in Global Development B.G.In.S.

Program Requirements**Bachelor of Global and International Studies (B.G.In.S.)**

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Development B.G.In.S. Honours (20.0 credits)**A. Credits included in the Major CGPA (12.0 credits)**

1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0]	International Experience Requirement Preparation
3. 7.5 credits in: the Specialization	
a. 0.5 credit in: Foundations	0.5
GINS 1100 [0.5]	Global Development
b. 1.5 credits in: Anthropology	1.5
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
or ANTH 1002 [0.5]	Introduction to Issues in Anthropology
ANTH 2850 [0.5]	Development and Underdevelopment
And one of:	
ANTH 3010 [0.5]	Language, Culture, and Globalization
ANTH 3025 [0.5]	Anthropology and Human Rights
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3040 [0.5]	The Global Middle Class
ANTH 3045 [0.5]	Children and Childhood in a Globalized World
ANTH 3355 [0.5]	Anthropology and the Environment
c. 1.5 credits in: Economics	1.5

ECON 1001 [0.5]	Introduction to Microeconomics (or FYSM 1003 in place of ECON 1001 and ECON 1002)	
ECON 1002 [0.5]	Introduction to Macroeconomics (or FYSM 1003 in place of ECON 1001 and ECON 1002)	
ECON 3508 [0.5]	Introduction to Economic Development	
d. 1.5 credits in: Geography		1.5
GEOG 2200 [0.5]	Global Connections	
GEOG 3404 [0.5]	Geographies of Economic Development	
And one of:		
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
e. 1.5 credits in: Political Science		1.5
PSCI 2102 [0.5]	Comparative Politics of the Global South	
One of:		
PSCI 3100 [0.5]	Politics of Development in Africa	
PSCI 3204 [0.5]	Politics of Latin America	
PSCI 3502 [0.5]	Gender and Politics: Global South	
PSCI 3700 [0.5]	Government and Politics of South Asia	
And one of:		
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice	
PSCI 4105 [0.5]	Selected Problems in Development in the Global South	
f. 0.5 credit in: Research Methodologies		0.5
IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis	
g. 0.5 credits from: Advanced courses		0.5
ANTH 4005 [0.5]	Health and Globalization	
ANTH 4109/5109 [0.5]	Ethnography, Gender and Globalization	
ANTH 4560 [0.5]	Economic Anthropology	
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples	
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research	
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship	
ECON 3509 [0.5]	Development Planning and Project Evaluation	
ECON 3510 [0.5]	African Economic Development	
ECON 4507 [0.5]	The Economics of Development	
ECON 4508 [0.5]	International Aspects of Economic Development	
ECON 4601 [0.5]	International Trade Theory and Policy	
ECON 4602 [0.5]	International Monetary Theory and Policy	
ECON 4800 [0.5]	Spatial Economics	

GEOG 4021 [0.5]	Seminar in Culture, Identity and Place	
GEOG 4024 [0.5]	Seminar in Globalization	
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice (if not used towards (e) above)	
PSCI 4105 [0.5]	Selected Problems in Development in the Global South (if not used towards (e) above)	
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa	
PSCI 4500 [0.5]	Gender and Globalization	
PSCI 4603 [0.5]	Analysis of International Political Economy	
PSCI 4605 [0.5]	Gender in International Relations	
PSCI 4800 [0.5]	Advanced International Relations Theory	
PSCI 4805 [0.5]	Political Economy of Global Money and Finance	
PSCI 4808 [0.5]	Global Environmental Politics	
Note: To meet the prerequisite requirements for the economics courses listed among the 4000-level Global Development electives above, students must have obtained a grade of C- or higher in one or both of ECON 2030 and ECON 2103 and, in the case of ECON 4800, a grade of C- or higher in ECON 2220 as well.		
B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in: Free Electives		8.0
C. Additional Requirements		
5. The International Experience requirement must be met.		
6. The Language requirement must be met.		
Total Credits		20.0

Stream in Global Development B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)		
1. 4.0 credits in: Core Courses		4.0
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream		4.0
a. Foundations		
GINS 1100 [0.5]	Global Development	
b. Anthropology		
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology	
	or ANTH 1002 [0.5] Introduction to Issues in Anthropology	
ANTH 2850 [0.5]	Development and Underdevelopment	
ANTH 3010 [0.5]	Language, Culture, and Globalization	

ANTH 3025 [0.5]	Anthropology and Human Rights
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3040 [0.5]	The Global Middle Class
ANTH 3045 [0.5]	Children and Childhood in a Globalized World
ANTH 3355 [0.5]	Anthropology and the Environment
c. Economics	
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
ECON 3508 [0.5]	Introduction to Economic Development
ECON 3509 [0.5]	Development Planning and Project Evaluation
ECON 3510 [0.5]	African Economic Development
d. Geography	
GEOG 2023 [0.5]	Cities, Inequality and Urban Change
GEOG 2200 [0.5]	Global Connections
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
d. Political Science	
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3700 [0.5]	Government and Politics of South Asia
e. Research Methodologies	
IPAF 2000 [0.5]	Quantitative Approaches to Policy Analysis

B. Credits Not Included in the Major CGPA (7.0 credits)

3. 7.0 credits in free electives 7.0

C. Additional Requirements

4. The Language requirements must be met.

Total Credits 15.0

Global and International Studies (GINS) Courses

GINS 1000 [0.5 credit]

Global History

Introduction to political, social, cultural, economic and military developments in global and international history.

Prerequisite(s): Enrolment in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 1010 [0.5 credit]

International Law and Politics

Introduction to the evolution of the international system, including the rise of the state, sovereignty, and the challenge of international cooperation. The role of international law in addressing global issues such as human rights, security and trade.

Prerequisite(s): Enrolment in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 1020 [0.5 credit]

Ethnography, Globalization and Culture

Introduction to the intersection of globalization processes with social and cultural diversity as examined through ethnography and ethnographic methods. Topics may include cultural survival, growing economic inequality, ecological vulnerabilities, health practices, human rights, and shifting racialized, gendered, religious, ethnic, and national identities.

Prerequisite(s): Enrolment in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 1100 [0.5 credit]

Global Development

Introduction to key questions and issues in development studies, taught from an inter-disciplinary perspective.

Lectures two hours a week, tutorials one hour a week.

GINS 1300 [0.0 credit]

International Experience Requirement Preparation

This mandatory course introduces BGIInS students to the International Experience Requirement (IER) and to the various policies and procedures associated with it. Graded SAT/UNS.

Prerequisite(s): first-year standing in BGIInS.

Online course.

GINS 2000 [0.5 credit]

Ethics and Globalization

Introduction to global ethical issues, focusing on alternative lines of ethical argument. Topics may include poverty and unequal development, climate change, war and terrorism, reparations for colonialism and slavery, international relief services, ill effects of globalization, trafficking and forced labour, democracy and global governance.

Prerequisite(s): Second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 2010 [0.5 credit]

Globalization and International Economic Issues

An introduction to the world economy, international trade and finance, and economic development. Social and economic implications for both rich and poor countries of lowered barriers to the international flows of goods, services, capital, labour, and information in the age of globalization.

Prerequisite(s): Second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 2020 [0.5 credit]

Global Literatures

A study of the global dynamics of the contemporary literary imagination and literary production; literature as cultural practice; the politics of literary circulation; the politics of language and translation.

Prerequisite(s): second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINs 3010 [0.5 credit]**Global and International Theory**

Advanced analysis of global and international theories from a variety of perspectives, including realism, liberalism, postmodernism, constructivism, post-structuralism, literary and critical approaches.

Prerequisite(s): third-year standing in B.G.In.S.

Lectures three hours a week.

GINs 3020 [0.5 credit]**Places, Boundaries, Movements and Global Environmental Change**

Examination of the relationship between individual places and global social and environmental processes. The changing nature of regions, states and political boundaries in the context of political and economic globalization and international migration. Social science perspectives on climate change vulnerability, adaptation and mitigation.

Prerequisite(s): third-year standing in B.G.In.S.

Lectures three hours a week.

GINs 3100 [0.5 credit]**Global and International Group Project**

Student teams work on a project related to global and international studies. Lectures are devoted to discussing group project-related issues and student presentations. A project proposal, a series of project reports and oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lecture one hour per week, tutorials two hours per week.

GINs 3200 [0.5 credit]**Experiential Learning Abroad**

An experiential learning opportunity combining volunteer work abroad with classroom instruction on the Carleton campus. Through experiential engagement outside Canada, together with critical reflection, students will learn about the challenges and rewards of global engagement.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing.

Lecture two hours a week plus a three week experiential learning trip abroad.

GINs 3300 [0.5 credit]**Global and International Studies Abroad: Selected Topics**

Based at a partner university around the world, and taught by a Carleton faculty member, the course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in global and international studies. Topic and location will change annually.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and approval by the B.G.In.S Program Director.

Three week intensive course.

GINs 3900 [0.5 credit]**International Placement**

Placement for six weeks with a global and international focus.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B.G.In.S.

GINs 3901 [1.0 credit]**International Placement**

Placement for twelve weeks with a global and international focus.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B.G.In.S.

GINs 3930 [0.5 credit]**Carleton International Placement**

Placement for six weeks with a global and international focus for students outside of the B.G.In.S Program.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3701, IPAF 3900 (no longer offered).

Prerequisite(s): Third-year standing and minimum CGPA of 9.0.

Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINs 3931 [1.0 credit]**Carleton International Placement**

Placement for twelve weeks with a global and international focus for students outside of the B.G.In.S Program.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3702, IPAF 3901 (no longer offered).

Prerequisite(s): Third-year standing and minimum CGPA of 9.0.

Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINs 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

GINs 4090 [0.5 credit]**Honours Seminar in Global and International Studies**

Examination of key debates in global and international studies from a variety of disciplinary and interdisciplinary perspectives. Integration of knowledge from different areas of emphasis in global studies. A major research paper is required that undertakes to focus theoretical insight on practical concerns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in B.G.In.S. Seminar three hours a week.

GINs 4900 [0.5 credit]**Tutorial in Global and International Studies**

A tutorial on selected topics in which seminars are not available.

Prerequisite(s): fourth-year Honours standing in B.G.In.S. and permission of the Program Director.

GINS 4908 [1.0 credit]

Honours Research Essay

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. B.G.In.S. regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in B.G.In.S. with a CGPA of 9.00 or higher, or permission of the Program Director.

Global Migration and Transnationalism (B.G.In.S. Specialization and Stream)

This section presents the requirements for programs in:

- Specialization in Global Migration and Transnationalism B.G.In.S. Honours
- Stream in Global Migration and Transnationalism B.G.In.S.

Program Requirements

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Migration and Transnationalism

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in Core Courses	4.5
GINS 1000 [0.5] Global History	
GINS 1010 [0.5] International Law and Politics	
GINS 1020 [0.5] Ethnography, Globalization and Culture	
GINS 2000 [0.5] Ethics and Globalization	
GINS 2010 [0.5] Globalization and International Economic Issues	
GINS 2020 [0.5] Global Literatures	
GINS 3010 [0.5] Global and International Theory	
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5] Honours Seminar in Global and International Studies	
2. 0.0 credit in International Experience Requirement Preparation	
GINS 1300 [0.0] International Experience Requirement Preparation	
3. 7.5 credits in the Specialization	7.5
a. 1.0 credits in Foundations	
ANTH 1001 [0.5] Introduction to Socio-Cultural Anthropology	
ANTH 1002 [0.5] Introduction to Issues in Anthropology	
ENGL 1009 [0.5] Literature in Global Context	
ENGL 1010 [0.5] Writing Essays about Literature	

FYSM 1408 [1.0] French on the World Stage	
GEOG 1020 [0.5] People, Places and Environments	
HIST 1707 [1.0] World History	
PSCI 1200 [0.5] Politics in the World	
PSCI 1501 [0.5] Politics of Migration	
SOCI 1001 [0.5] Introduction to Sociology I	
SOCI 1002 [0.5] Introduction to Sociology II	
b. 0.5 credit in Specialization Core Course	
MGDS 2000 [0.5] Global Migration and Transnationalism	

c. 3.5 credits from Global Migration and Transnationalism Thematic Categories

Must include 0.5 credit from each category:

- 1) Transnationalism in the Arts, Literature, and Music
- 2) Historical, Cultural, and Regional Contexts
- 3) Citizenship, Identity, and Rights
- 4) International Migration, Globalization, and Politics

At least 1.0 credit must be at the 3000-level. Only 0.5 credit at the 1000-level.

d. 1.0 credits from: Advanced Approaches in Global Migration and Transnationalism

AFRI 3005 [0.5] African Migrations and Diasporas	
ECON 3370 [0.5] The Economics of Migration	
ENGL 3940 [0.5] Studies in Diaspora Lit.	
HIST 3500 [0.5] Migration and Diaspora in Canada	
HIST 3507 [0.5] An Immigrant's Guide to Canada	
PSCI 3608 [0.5] Migration Governance	
SOCI 3019 [0.5] Sociology of International Migration	

e. 1.5 credits from Approved 4000-level Honours Courses in Global Migration and Transnationalism

Notes:

- 1) Please see the list of Approved Courses in Global Migration and Transnationalism in this calendar for courses that fulfill the above thematic category and 4000-level Honours requirements.
- 2) Courses in the Specialization that potentially fulfill more than one specialization requirement can only be counted once.
- 3) Some upper-level courses on this list may have specific prerequisites. Students are encouraged to consult the course calendar when planning their schedules to be aware of those prerequisites and to fulfill them before registering. Prerequisites that do not count towards the Major CGPA may be counted towards free electives.

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives 8.0

C. Additional Requirements

5. The International Experience requirements must be met.
6. The Language requirement must be met.

Total Credits 20.0

Stream in Global Migration and Transnationalism B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in Core Courses	4.0
GINS 1000 [0.5] Global History	
GINS 1010 [0.5] International Law and Politics	
GINS 1020 [0.5] Ethnography, Globalization and Culture	

GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits in the Stream		4.0
a. 1.0 credit from Foundations		
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology	
ANTH 1002 [0.5]	Introduction to Issues in Anthropology	
ENGL 1009 [0.5]	Literature in Global Context	
ENGL 1010 [0.5]	Writing Essays about Literature	
FYSM 1408 [1.0]	French on the World Stage	
GEOG 1020 [0.5]	People, Places and Environments	
HIST 1707 [1.0]	World History	
PSCI 1200 [0.5]	Politics in the World	
PSCI 1501 [0.5]	Politics of Migration	
SOCI 1001 [0.5]	Introduction to Sociology I	
SOCI 1002 [0.5]	Introduction to Sociology II	
b. 0.5 credit in Stream Core Course		
MGDS 2000 [0.5]	Global Migration and Transnationalism	
c. 2.5 credits from Global Migration and Transnationalism Thematic Categories		
1) Transnationalism in the Arts, Literature, and Music		
2) Historical, Cultural, and Regional Contexts		
3) Citizenship, Identity, and Rights		
4) International Migration, Globalization, and Politics		
Must include 0.5 credit in at least three of the four categories. Only 0.5 credit at the 1000 level. At least 1.0 credit must be at the 3000 level.		
B. Credits Not Included in the Major CGPA (7.0 credits)		
3. 7.0 credits in Free Electives		7.0
C. Additional Requirements		
4. The Language requirement must be met.		
Total Credits		15.0

Approved Courses in Global Migration and Transnationalism

This list contains approved courses in Global Migration and Transnationalism that fulfil the four thematic and 4000-level Honours requirements for the BGIoS Global Migration and Transnationalism Stream and Specialization. Students are advised that some courses may have prerequisites that must be met in order to register for a particular course.

Global Migration and Transnationalism Thematic Categories

- 1) Transnationalism in the Arts, Literature, and Music
- 2) Historical, Cultural, and Regional Contexts
- 3) Citizenship, Identity, and Rights
- 4) International Migration, Globalization, and Politics

Approved Courses in Global Migration and Transnationalism

1) Transnationalism in the Arts, Literature, and Music

AFRI 3609 [0.5]	African Cinema
ARTH 2003 [0.5]	Canadian Twentieth-Century and Contemporary Art
ARTH 2005 [0.5]	Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
ARTH 2006 [0.5]	Arts of the First Peoples: The Southwest, the West Coast and the Arctic
ARTH 2007 [0.5]	Asian Art
ARTH 2008 [0.5]	Inuit Art
ARTH 2107 [0.5]	Islamic Architecture and Art
ARTH 2108 [0.5]	Art Worlds
ARTH 3007 [0.5]	Modern Asian Art
ARTH 3008 [0.5]	Contemporary Chinese Art and Art History
ENGL 2920 [0.5]	Topics in Decolonization and Migration I
ENGL 2926 [0.5]	African Literatures I
ENGL 2927 [0.5]	African Literatures II
ENGL 2936 [0.5]	South Asian Literatures I
ENGL 2937 [0.5]	South Asian Literatures II
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
ENGL 3603 [0.5]	20th- and 21st-century Fiction
ENGL 3702 [0.5]	American Culture
ENGL 3930 [0.5]	Topics in Decolonization and Migration II
ENGL 3940 [0.5]	Studies in Diaspora Lit.
ENGL 3960 [0.5]	Studies in Indigenous Literature
ENGL 3965 [0.5]	Intro to Postcolonial Theory
ENGL 3972 [0.5]	Studies in Postcolonial Literature
EURR 3001 [0.5]	Literature and Culture in Europe
EURR 3002 [0.5]	Literature and Culture in Russia and Eurasia
FREN 3215 [0.5]	Les ères du soupçon : contemporanéités de la littérature
MUSI 2005 [0.5]	Introduction to Jazz History
MUSI 2008 [0.5]	Music of the World's Peoples
MUSI 3106 [0.5]	Popular Musics of the World

2) Historical, Cultural, and Regional Contexts

AFRI 1001 [0.5]	Introduction to African Studies I
AFRI 1002 [0.5]	Introduction to African Studies II
AFRI 3005 [0.5]	African Migrations and Diasporas
ANTH 2610 [0.5]	Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
EURR 1001 [0.5]	Introduction to European and Russian Studies
EURR 2001 [0.5]	Current Issues in European Politics and Society
EURR 2002 [0.5]	Europe and Russia in the World
HIST 2304 [1.0]	Social and Cultural History of Canada
HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2312 [0.5]	History of the Indian Ocean World
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa

HIST 2707 [0.5]	Modern Africa
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 3111 [0.5]	History of Humanitarian Aid
HIST 3209 [0.5]	Canadian Urban History
HIST 3406 [0.5]	African-American Women
HIST 3413 [0.5]	The United States and Its Borderlands
HIST 3500 [0.5]	Migration and Diaspora in Canada
HIST 3507 [0.5]	An Immigrant's Guide to Canada
HIST 3510 [0.5]	Indigenous Peoples of Canada
HIST 3511 [0.5]	Themes in Indigenous History
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3712 [0.5]	Mexico: Aztecs to Narcos
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions
HIST 3715 [0.5]	Themes in South Asian History
HIST 3813 [0.5]	Problems in Global and Transnational Histories
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II
RELI 1712 [0.5]	Religions of South and East Asia
RELI 2110 [0.5]	Judaism
RELI 2310 [0.5]	Islam
RELI 2355 [0.5]	Islamic Ethics
RELI 2410 [0.5]	Buddhism
RELI 2510 [0.5]	Hinduism
RELI 2720 [0.5]	Indigenous Religions of Canada
RELI 2750 [0.5]	Sikhism
RELI 3330 [0.5]	Sufism
RELI 3422 [0.5]	Buddhism Beyond India
RELI 3522 [0.5]	Modern Hinduism
3) Citizenship, Identity, and Rights	
ANTH 2020 [0.5]	Race and Ethnicity
ANTH 3010 [0.5]	Language, Culture, and Globalization
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3025 [0.5]	Anthropology and Human Rights
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
BUSI 2702 [0.5]	Introduction to International Management
BUSI 3700 [0.5]	Cross-cultural Communication
COMS 3109 [0.5]	Communication, Culture and Identity
ECON 3380 [0.5]	The Economics of Gender and Ethnicity
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
INDG 2011 [0.5]	Contemporary Indigenous Studies
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality
INDG 3001 [0.5]	Indigenous Governance
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence

HUMR 3301 [0.5]	Racialization, Racism and Human Rights
HUMR 3302 [0.5]	Culture, Religion, and Women's Human Rights
HUMR 3401 [0.5]	Histories of Persecution and Genocide
LAWS 2105 [0.5]	Social Justice and Human Rights
LAWS 2502 [0.5]	Law, State and Citizen
LAWS 3503 [0.5]	Equality and Discrimination
LAWS 3504 [0.5]	Law and Aboriginal Peoples
LAWS 3602 [0.5]	International Human Rights
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 3805 [0.5]	Politics of Race
RELI 2712 [0.5]	Religious Diversity of Canada
RELI 2800 [0.5]	Indigenous Traditions
RELI 3101 [0.5]	Special Topics in Religions and the Body
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3027 [0.5]	Globalization and Human Rights
SOCI 3805 [0.5]	Studies in Population
SOWK 3206 [0.5]	Community Development and Social Change in an International Context
SOWK 3207 [0.5]	Human Rights Practice in Civil Society
WGST 2800 [0.5]	Intersectional Identities
WGST 2803 [0.5]	Body Matters: The Politics of Bodies
WGST 3803 [0.5]	Feminisms and Transnationalism
4) International Migration, Globalization, and Politics	
ANTH 2850 [0.5]	Development and Underdevelopment
ECON 3370 [0.5]	The Economics of Migration
GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3024 [0.5]	Understanding Globalization
GEOG 3700 [0.5]	Population Geography
HIST 3217 [0.5]	Empire and Globalization
HIST 3813 [0.5]	Problems in Global and Transnational Histories
PSCI 1501 [0.5]	Politics of Migration
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3102 [0.5]	Politics of Development of China
PSCI 3105 [0.5]	Imperialism
PSCI 3203 [0.5]	Government and Politics in the Middle East
PSCI 3608 [0.5]	Migration Governance
PSCI 3700 [0.5]	Government and Politics of South Asia
SOCI 3019 [0.5]	Sociology of International Migration
SOCI 3805 [0.5]	Studies in Population

Approved 4000-level Honours Courses in Global Migration and Transnationalism

AFRI 4000 [0.5]	Advanced Topics in African Studies	HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World
AFRI 4003 [0.5]	History of 'The African Child'	HUMR 4404 [0.5]	Rights of Refugees and Displaced Persons
AFRI 4050 [0.5]	Selected Topics in African Studies	HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology	INDG 4001 [0.5]	Indigeneity in the City
ANTH 4020 [0.5]	Advanced Studies in Race and Ethnicity	INDG 4011 [0.5]	Indigenous Representations
ANTH 4109 [0.5]	Ethnography, Gender and Globalization	LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies
ANTH 4200 [0.5]	War, Security and Citizenship	LACS 4819 [0.5]	Latin America and the World
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	LAWS 4006 [0.5]	Religion and State in Canada
ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship	LAWS 4102 [0.5]	Controversies in Rights Theory
ARTH 4003 [0.5]	Topics in Contemporary Chinese Art	LAWS 4601 [0.5]	Transnational Law and Human Rights
ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art	LAWS 4606 [0.5]	International Law of Armed Conflict
ARTH 4007 [0.5]	Topics in Asian Art	LAWS 4607 [0.5]	Immigration and Refugee Law
ARTH 4008 [0.5]	Transnational Theory	MGDS 4900 [0.5]	Special Topics in Migration and Diaspora Studies
BUSI 4706 [0.5]	International Human Resource Management	MUSI 4005 [0.5]	Issues in Jazz Studies
CDNS 4400 [0.5]	Space, Landscape and Identity in Canada	MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada
CDNS 4500 [0.5]	Global Canada	MUSI 4104 [0.5]	First Peoples Music in Canada
COMS 4316 [0.5]	Indigenous Media in Global Contexts	PSCI 4503 [0.5]	Politics of Central Eurasia
COMS 4603 [0.5]	Diaspora and Communication	PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin
COMS 4605 [0.5]	Media, Race and Ethnicity	PSCI 4610 [0.5]	Politics of Migration Management
ENGL 4609 [0.5]	Global Stages and Theories	PSCI 4801 [0.5]	Selected Problems in Global Politics
ENGL 4802 [0.5]	Race, Ethnicity and Canadian Lit.	PSCI 4807 [0.5]	Politics of Citizenship and Migration
ENGL 4947 [0.5]	Issues in Diaspora Literature	PSCI 4817 [0.5]	International Politics of Forced Migration
ENGL 4960 [0.5]	Indigenous Literatures I	PSCI 4819 [0.5]	Latin America and the World
ENGL 4961 [0.5]	Indigenous Literatures II	RELI 4850 [0.5]	Seminar in the Study of Religion
ENGL 4975 [0.5]	Issues in Postcolonial Theory	SOCI 4043 [0.5]	Families in the 21st Century
ENGL 4976 [0.5]	Issues in Postcolonial Literature	SOWK 4103 [0.5]	Practice and Policy in Immigration
EURR 4207 [0.5]	Politics of Central Eurasia		
EURR 4209 [0.5]	Politics of the Caucasus and Caspian Basin		
EURR 4304 [0.5]	Europe and International Migration		
FREN 4412 [0.5]	Diversité du français		
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place		
GEOG 4023 [0.5]	Seminar in Special Topics on the City		
GEOG 4024 [0.5]	Seminar in Globalization		
GINS 4908 [1.0]	Honours Research Essay		
HIST 4700 [1.0]	Seminar in World History		
HIST 4701 [0.5]	African History		
HIST 4702 [0.5]	South Asian History		
HIST 4703 [0.5]	The Global South		
HIST 4704 [0.5]	Caribbean and Latin American History		
HIST 4805 [1.0]	Seminar on a Transnational or Thematic Topic		
HIST 4806 [0.5]	Global, Transnational, or Thematic History		
HUMR 4201 [0.5]	Citizenship and Human Rights		

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Migration and Diaspora Studies (MGDS) Courses

MGDS 2000 [0.5 credit]

Global Migration and Transnationalism

Introduction to the social, cultural, economic and political implications of the movement of people with a multidisciplinary and multiscale approach to topics such as migration and immigration, diaspora identities, global culture, and transnationalism.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

MGDS 4900 [0.5 credit]

Special Topics in Migration and Diaspora Studies

Advanced topics in Migration and Diaspora Studies. Topics vary from term to term.

Prerequisite(s): Fourth-year standing or permission of the department.

Also offered at the graduate level, with different requirements, as MGDS 5900, for which additional credit is precluded.

Seminar three hours a week

Greek and Roman Studies

This section presents the requirements for programs in:

- Greek and Roman Studies B.A. Honours
- Greek and Roman Studies B.A. Combined Honours
- Greek and Roman Studies B.A.
- Minor in Archaeology
- Minor in Greek and Roman Studies

Program Requirements

Greek and Roman Studies

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.0 credit in GREK or LATN	1.0
2. 3.0 credits in 2000-level CLCV, GREK, or LATN	3.0
3. 2.0 credits in 3000-level or higher in CLCV, GREK or LATN	2.0
4. 1.0 credit in 4000-level CLCV, GREK, or LATN	1.0
5. 3.0 credits in electives in Greek and Roman Studies (CLCV, GREK, LATN, FYSM 1106)	3.0

B. Credits Not Included in the Major CGPA (10.0 credits)

6. 8.0 credits in electives not in Greek and Roman Studies (CLCV, GREK, LATN)	8.0
7. 2.0 credits in free electives.	2.0

Total Credits 20.0

Greek and Roman Studies

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit in GREK or LATN	1.0
2. 2.0 credits from 2000-level CLCV, GREK, LATN	2.0
3. 2.0 credits from 3000-level or higher CLCV, GREK, LATN	2.0
4. 1.0 credit in 4000-level CLCV, GREK or LATN	1.0
5. 1.0 credit in electives in Greek and Roman Studies (CLCV, GREK, LATN, FYSM 1106)	1.0

B. Additional Requirements (13.0 credits)

6. The requirements for the other discipline must be satisfied	
7. Sufficient free electives to make 20.0 credits total for the degree.	

Total Credits 20.0

Greek and Roman Studies

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 3.0 credits in 2000-level CLCV, GREK, or LATN	3.0
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2. 2.0 credits in 3000-level CLCV, GREK, or LATN	2.0
3. 1.0 credit in electives in Greek and Roman Studies (CLCV, GREK, LATN, FYSM 1106)	1.0

B. Credits Not Included in the Major CGPA (9.0 credits)

4. 6.0 credits in electives not in Greek and Roman Studies (CLCV, GREK, LATN)	7.0
5. 3.0 credits in free electives	2.0

Total Credits 15.0

Minor in Archaeology (4.0 credits)

Open to all undergraduate degree students.

Requirements:

1. 1.0 credit in:	1.0
ARCY 1008 [0.5] Introduction to Archaeology I & ARCY 1009 [0.5] Introduction to Archaeology II	
Or	
CLCV 1008 [0.5] Introduction to Archaeology I & CLCV 1009 [0.5] Introduction to Archaeology II	
2. 1.0 credit in ARCY or approved electives at the 2000 level	1.0
3. 1.0 credit in ARCY or approved electives at the 3000 level	1.0
4. 1.0 credit in ARCY or approved electives at any level	1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied.	

Total Credits 4.0

Approved Archaeology Electives

Other courses may be substituted for those specified below, when material on archaeology is central to the course. Such substitutions must be individually approved by the Greek and Roman Studies Program Coordinator.

Note: "R" designates that the course is repeatable.

Anthropology

ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums

Art History

ARTH 1100 [0.0]	Art and Society: Prehistory to the Renaissance
ARTH 1101 [0.0]	Art and Society: Renaissance to the Present
ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present
ARTH 2102 [0.5]	Greek Art and Archaeology
ARTH 2105 [0.5]	Roman Art and Archaeology
ARTH 2202 [0.5]	Medieval Architecture and Art
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries
ARTH 3102 [0.5]	Studies in Greek Art
ARTH 3105 [0.5]	Studies in Roman Art

Biology

BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2005 [0.5]	Human Biology

Chemistry	
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
Digital Humanities	
DIGH 2035 [0.5]	Technology, Culture and Society
Greek and Roman Studies	
CLCV 2303/ ARTH 2102 [0.5]	Greek Art and Archaeology
CLCV 2304/ ARTH 2105 [0.5]	Roman Art and Archaeology
CLCV 2305/ TSES 2305 [1.0]	Ancient Science and Technology
CLCV 3301 [0.5]	Field Work I: Greek and Roman World (R)
CLCV 3306/ ARTH 3102/ RELI 3732 [0.5]	Studies in Greek Art (R)
CLCV 3307/ ARTH 3105/ RELI 3733 [0.5]	Studies in Roman Art (R)
CLCV 3400 [0.5]	Greek and Roman Studies Abroad (R)
CLCV 4000 [0.5]	Field Work II: Greek and Roman World (R)
Earth Sciences	
ERTH 2312 [0.5]	Paleontology
ERTH 2401 [0.5]	Dinosaurs
ERTH 2415 [0.5]	Natural Disasters
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3113 [0.5]	Geology of Human Origins
Geography	
GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3102 [0.5]	Geomorphology
GEOG 3108 [0.5]	Soil Properties
Geomatics	
GEOM 1004 [0.5]	Maps, Satellites and the Geospatial Revolution
GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons
GEOM 3002 [0.5]	Introduction to Remote Sensing
Religion	
RELI 3732 [0.5]	Studies in Greek Art
RELI 3733 [0.5]	Studies in Roman Art
Sociology	
SOCI 2035 [0.5]	Technology, Culture and Society
Technology, Society, Environment Studies	
TSES 2305/ CLCV 2305 [1.0]	Ancient Science and Technology

Minor in Greek and Roman Studies (4.0 credits)

Open to all undergraduate degree students not in the Greek and Roman Studies programs.

Requirements

1. **1.0 credit from** CLCV, GREK or LATN at the 2000-level or above 1.0

2. **1.0 credit from** CLCV, GREK or LATN at the 3000-level or above 1.0

3. **2.0 credits from** any level of CLCV, GREK, or LATN (may include FYSM 1106 [1.0]) 2.0

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System.

Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required.

Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Classical Civilization (CLCV) Courses

CLCV 1002 [0.5 credit]

Survey of Greek Civilization

Introduction to the study of Greek antiquity and the discipline of Classics and its methodologies. Greek culture and society are set in their historical contexts and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period.

Precludes additional credit for CLCV 1000, and CLCV 1109.

Lecture three hours a week.

CLCV 1003 [0.5 credit]**Survey of Roman Civilization**

Introduction to the study of Roman antiquity and the discipline of Classics and its methodologies. The culture and society are set in their historical context and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period.

Precludes additional credit for CLCV 1000 and CLCV 1109.

Lecture three hours a week.

CLCV 1004 [0.5 credit]**Elementary Language Tutorial I**

Elementary study of an ancient language.

Prerequisite(s): Permission of the unit.

Tutorial two hours a week plus out-of-class requirements.

CLCV 1005 [0.5 credit]**Elementary Language Tutorial II**

Elementary study of an ancient language.

Prerequisite(s): Permission of the department.

Tutorial two hours a week plus out-of-class requirements.

CLCV 1008 [0.5 credit]**Introduction to Archaeology I**

Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater.

Also listed as ARCY 1008.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week.

CLCV 1009 [0.5 credit]**Introduction to Archaeology II**

Continues the examination of various aspects of field archaeology begun in CLCV 1008. This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches.

Also listed as ARCY 1009.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week.

CLCV 2004 [0.5 credit]**Intermediate Language Tutorial I**

Intermediate study of an ancient language.

Prerequisite(s): permission of the unit.

Tutorial two hours a week plus out-of-class requirements.

CLCV 2005 [0.5 credit]**Intermediate Language Tutorial II**

Intermediate study of an ancient language.

Prerequisite(s): permission of the unit.

Tutorial two hours a week plus out-of-class requirements.

CLCV 2008 [0.5 credit]**Greek and Roman Epic**

An examination of the genre of epic in Greco-Roman antiquity, including a close reading of translations of Homer and Vergil.

Also listed as ENGL 2012.

Precludes additional credit for CLCV 2009 and ENGL 2009 (no longer offered).

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

CLCV 2010 [0.5 credit]**Greek and Roman Drama**

An examination of the genres of tragedy and comedy in Greco-Roman antiquity.

Also listed as ENGL 2605.

Precludes additional credit for CLCV 2009 or ENGL 2009 (no longer offered).

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

CLCV 2100 [0.5 credit]**Scientific and Medical terminology**

Examination of Ancient Greek and Latin roots of technical terms found in the sciences, engineering, and medicine.

Lecture three hours a week.

CLCV 2103 [0.5 credit]**Greek Religion**

A study of religion in ancient Greece.

Also listed as RELI 2735.

Precludes additional credit for CLCV 2102 and RELI 2734.

Lecture three hours a week.

CLCV 2104 [0.5 credit]**Roman Religion**

A study of religion in ancient Rome.

Also listed as RELI 2737.

Precludes additional credit for CLCV 2102 and RELI 2734.

Lecture three hours a week.

CLCV 2105 [1.0 credit]**Ancient Philosophy: The Search for Wisdom**

An exploration of ancient philosophy as a search for wisdom and happiness from its Presocratic beginnings in Greece to its development in the Hellenistic world and Imperial Rome. Emphasis on philosophy as a contemplative activity and as a way of life.

Also listed as PHIL 2005.

Precludes additional credit for PHIL 2006, CLCV 2006, PHIL 2007, CLCV 2007 (no longer offered).

CLCV 2303 [0.5 credit]**Greek Art and Archaeology**

The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts.

Also listed as ARTH 2102.

Precludes additional credit for CLCV 2302 (no longer offered) and ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2304 [0.5 credit]**Roman Art and Archaeology**

The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as ARTH 2105.

Precludes additional credit for CLCV 2302 and ARTH 2100.

Prerequisite(s): second-year standing or permission of the unit.

CLCV 2305 [1.0 credit]**Ancient Science and Technology**

The development and application of ancient science and technology in the fields of ancient engineering, machinery, metallurgy, transport, building, agriculture and Hippocratic medicine; the social position of craftsmen and artisans, the attitude of intellectuals to science and manual labour, the effects of slavery.

Also listed as TSES 2305.

Prerequisite(s): second-year standing or permission of the Department. This course is suitable for students with no previous knowledge of Greece or Rome.

Lecture three hours a week.

CLCV 2500 [0.5 credit]**Classical Mythology**

A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth.

Also listed as ENGL 2500.

Precludes additional credit for CLCV 2000 and ENGL 2007 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2902 [0.5 credit]**Origins of the Greeks**

The history of ancient Greece from the Bronze Age through the Archaic period.

Also listed as HIST 2902.

Precludes additional credit for CLCV 2900 and HIST 2900.

Prerequisite(s): second-year standing or permission of unit.

Lecture three hours a week.

CLCV 2903 [0.5 credit]**Democracy to Alexander**

The history of ancient Greece from the classical period to Alexander.

Also listed as HIST 2903.

Precludes additional credit for CLCV 2900 and HIST 2900.

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2904 [0.5 credit]**Rise of the Roman Empire**

The history of ancient Rome from early Rome to the end of the Republic.

Also listed as HIST 2904.

Precludes additional credit for CLCV 2901 and HIST 2901.

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2905 [0.5 credit]**Rome of the Caesars**

The history of ancient Rome from the end of the Republic to the coming of Islam.

Also listed as HIST 2905.

Precludes additional credit for CLCV 2901 (no longer offered) and HIST 2901 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2906 [0.5 credit]**Studies in Classical Civilization**

A study of a selected topic in ancient history, literature, languages, culture, archaeology and/or technology.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3000 [0.5 credit]**Topics in Ancient History**

A study of a selected topic in ancient history.

Also listed as HIST 3000.

Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3001 [0.5 credit]**Early Greek Philosophy**

A study of the pre-Socratic philosophers and of the Sophists and Socrates.

Also listed as PHIL 3001.

Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Philosophy department.

Lectures three hours a week.

CLCV 3003 [0.5 credit]**Topics in Classical Civilization**

A study of a selected topic in classical civilization.

Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3010 [0.5 credit]**The Later Roman Empire**

The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire.

Also listed as HIST 3010.

Precludes additional credit for CLCV 3002 and HIST 3002.

Prerequisite(s): a 2000-level CLCV course.

Lecture three hours a week.

CLCV 3011 [0.5 credit]**Topics in Ancient Philosophy**

A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle.

Also listed as PHIL 3000.

Prerequisite(s): 0.5 credit in PHIL and second-year standing, or permission of the Philosophy department.

Lectures three hours a week.

CLCV 3201 [0.5 credit]**Studies in Greek History**

Study of a period or theme in Greek History.

Also listed as HIST 3009.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3202 [0.5 credit]**Studies in Roman History**

Study of a period or theme in Roman History.

Also listed as HIST 3101.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3215 [0.5 credit]**Ancient Greek Science**

The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).

Also listed as HIST 3215.

Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lecture three hours a week.

CLCV 3301 [0.5 credit]**Field Work I: Greek and Roman World**

Students will participate for a minimum of three weeks on an archaeological field project (i.e., excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.

Includes: Experiential Learning Activity

Also listed as ARCY 3301.

Prerequisite(s): CLCV 1008 and CLCV 1009 or CLCV 2300 and permission of the unit. Permission of the unit is required to repeat this course.

CLCV 3306 [0.5 credit]**Studies in Greek Art**

A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year.

Also listed as ARTH 3102, RELI 3732.

Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3307 [0.5 credit]**Studies in Roman Art**

A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.

Also listed as ARTH 3105, RELI 3733.

Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3400 [0.5 credit]**Greek and Roman Studies Abroad**

This course combines academic study in Canada with first hand examination of museum collections and sites of the ancient world, normally in Greece and Italy. Course content varies from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): 1.0 credit in Greek and Roman Studies, any level (CLCV, GREK, or LATN. Permission of the unit is required to repeat this course.

Hours to be arranged.

CLCV 3701 [0.5 credit]**Studies in Greek Literature**

A study of an author or topic in Greek literature. Contents of this course vary from year to year.

Also listed as ENGL 3008.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3702 [0.5 credit]**Studies in Roman Literature**

A study of an author or topic in Roman literature.

Also listed as ENGL 3009.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 4000 [0.5 credit]**Field Work II: Greek and Roman World**

Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.

Includes: Experiential Learning Activity

Also listed as ARCY 4000.

Prerequisite(s): CLCV 3300 and permission of the unit.

Permission of the unit is required to repeat this course.

Field work

CLCV 4210 [0.5 credit]**Topics in Ancient History**

Intended for Honours students in History and Classics who should normally be in the third and fourth-years.

Includes: Experiential Learning Activity

Also listed as HIST 4210.

Prerequisite(s): CLCV 2902 (HIST 2902),

CLCV 2903 (HIST 2903) or CLCV 2904 (HIST 2904),

CLCV 2905 (HIST 2905) or CLCV 3201 or CLCV 3202 or permission of the unit.

Seminar three hours a week.

CLCV 4800 [0.5 credit]**Seminar in Greek and Roman Studies**

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.

Includes: Experiential Learning Activity

Seminar three hours a week.

CLCV 4801 [0.5 credit]**Seminar in Greek and Roman Studies**

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.

Includes: Experiential Learning Activity

Seminar three hours a week.

CLCV 4900 [0.5 credit]**Directed Readings and Research**

These courses consist of supervised readings and research projects in a specific area of Classical Civilization to be chosen in consultation with a faculty Supervisor who agrees to oversee a student's proposed research.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing and permission of the unit.

Greek (GREK) Courses**GREK 1005 [0.5 credit]****Introduction to Greek I**

A course for beginners in ancient Greek, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Greek.

Includes: Experiential Learning Activity

Lectures and tutorials four hours a week.

GREK 1006 [0.5 credit]**Introduction to Greek II**

A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.

Includes: Experiential Learning Activity

Prerequisite(s): GREK 1005 or equivalent.

Lectures and tutorials four hours a week.

GREK 2200 [0.5 credit]**Intermediate Greek I**

Further study of the language; introduction to the reading of ancient Greek authors.

Includes: Experiential Learning Activity

Precludes additional credit for GREK 2001.

Prerequisite(s): GREK 1006 or equivalent.

Tutorials three hours a week.

GREK 2201 [0.5 credit]**Intermediate Greek II**

Continued study of the language; reading of selected prose and poetry by ancient Greek authors; development of translation skills.

Precludes additional credit for GREK 2001.

Prerequisite(s): GREK 2200 or equivalent.

Tutorials three hours a week.

GREK 3900 [0.5 credit]**Advanced Greek I**

Reading and critical discussion of selections from ancient Greek.

Prerequisite(s): GREK 2200, GREK 2201 or equivalent.

Tutorials three hours a week.

GREK 3901 [0.5 credit]**Advanced Greek II**

Reading and critical discussion of selections from ancient Greek.

Prerequisite(s): GREK 2200, GREK 2201 or equivalent.

Tutorials three hours a week.

GREK 4900 [0.5 credit]**Directed Study****GREK 4901 [0.5 credit]****Directed Study**

Latin (LATN) Courses

LATN 1005 [0.5 credit]

Introduction to Latin I

A course for beginners in Latin, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Latin.

Includes: Experiential Learning Activity

Lectures and practice periods four hours a week.

LATN 1006 [0.5 credit]

Introduction to Latin II

A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.

Includes: Experiential Learning Activity

Prerequisite(s): LATN 1005 or equivalent.

Lectures and practice periods four hours a week.

LATN 2200 [0.5 credit]

Intermediate Latin I

Further study of the language; introduction to the reading of Latin authors.

Includes: Experiential Learning Activity

Precludes additional credit for LATN 2001.

Prerequisite(s): LATN 1006 or equivalent.

Tutorials three hours a week.

LATN 2201 [0.5 credit]

Intermediate Latin II

Continued study of the language; reading of selected prose and poetry by Latin authors; development of translation skills.

Precludes additional credit for LATN 2001.

Prerequisite(s): LATN 2200 or equivalent.

Tutorials three hours a week.

LATN 3900 [0.5 credit]

Advanced Latin I

Reading and critical discussion of selections from Latin poetry.

Prerequisite(s): LATN 2200, LATN 2201 or equivalent.

Tutorials three hours a week.

LATN 3901 [0.5 credit]

Advanced Latin II

Reading and critical discussion of selections from Latin prose.

Prerequisite(s): LATN 2200, LATN 2201 or equivalent.

Tutorials three hours a week.

LATN 4900 [0.5 credit]

Directed Study

LATN 4901 [0.5 credit]

Directed Study

Health Sciences

This section presents the requirements for programs in:

- Health Sciences with Concentration B.H.Sc. Honours
- Concentration in Biomedical Sciences

- Concentration in Disability and Chronic Illness
- Concentration in Environment and Health
- Concentration in Global Health
- Concentration in Health Throughout the Lifespan
- Health Sciences B.H.Sc.
- Journalism with Concentration in Health Sciences B.J. Honours
- Minor in Health Sciences

Program Requirements

Students in the B.H.Sc. Honours program choose to follow one of five concentrations. The selection must take place at admission.

Health Sciences with Concentration B.H.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA 10.5 credits)

1. 4.5 credits in: 4.5

HLTH 1000 [0.5]	Fundamentals of Health
HLTH 1002 [0.5]	Health Science Communication
HLTH 2001 [0.5]	Health Research Methods and Skills
HLTH 2002 [0.5]	Molecular and Cellular Pathology
HLTH 2003 [0.5]	Social Determinants of Health
HLTH 3101 [0.5]	Global Health
HLTH 3201 [0.5]	Epidemiology
HLTH 3302 [0.5]	Immunity and Immune-Related Disorders
HLTH 3404 [0.5]	Psychosocial and Biological Interactions in Health

2. 1.5 credits in: 1.5

a) Project/Field Placement pathway

0.5 credit from:

HLTH 3901 [0.5]	Emerging Issues in Health Sciences I
HLTH 3902 [0.5]	Emerging Issues in Health Sciences II
HLTH 3903 [0.5]	Emerging Issues in Health Sciences III
HLTH 3904 [0.5]	Emerging Issues in Health Sciences IV
HLTH 3905 [0.5]	Emerging Issues in Health Sciences V

and

1.0 credit from:

HLTH 4907 [1.0]	Capstone Course – Group Research Project
HLTH 4909 [1.0]	Capstone Course – Field Placement and Research Project
HLTH 4910 [1.0]	Honours Individual Research Thesis

OR

b) Essay pathway

0.5 credit in HLTH elective at the 3000 level or above

and

1.0 credit in:

HLTH 4906 [1.0]	Capstone course – Research Essay
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3. 0.5 credit in HLTH at the 3000 level or above 0.5

4. 4.0 credits in concentration electives at the 3000 level or above	4.0
B. Credits Not Included in the Major CGPA (9.5 credits)	
5. 2.5 credits in:	2.5
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
MATH 1007 [0.5]	Elementary Calculus I
6. 1.0 credit from:	1.0
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
PSYC 1001 [0.5]	Introduction to Psychology I
PSYC 1002 [0.5]	Introduction to Psychology II
7. 1.0 credit in:	1.0
STAT 2507 [0.5]	Introduction to Statistical Modeling I
STAT 2509 [0.5]	Introduction to Statistical Modeling II
8. 1.0 credit in:	1.0
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
9. 0.5 credit in approved 2000-level concentration electives	0.5
10. 0.5 credit from:	0.5
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues
PHIL 2408 [0.5]	Bioethics
11. 3.0 credits in free electives.	3.0
NOTE: The maximum allowed combined number of minors and concentrations for any student is two.	
Total Credits	20.0

Concentration in Biomedical Sciences (5.0 credits)

1. 0.5 credit from:	0.5
CHEM 2203 [0.5]	Organic Chemistry I
FOOD 2001 [0.5]	Principles of Nutrition
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience
PSYC 2301 [0.5]	Introduction to Health Psychology
2. 2.5 credits in:	2.5
BIOL 3104 [0.5]	Molecular Genetics
BIOL 3305 [0.5]	Human and Comparative Physiology
or BIOL 3306 [0.5]	Human Anatomy and Physiology
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology
HLTH 2004 [0.5]	Microbiology and Virology
HLTH 3303 [0.5]	Molecular and Cellular Pathology II
3. 0.5 credit from:	0.5
HLTH 4201 [0.5]	Applied Health Statistics
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods
4. 1.0 credit from:	1.0
COMS 2500 [0.5]	Communication and Science
HLTH 3401 [0.5]	Diseases of Childhood
HLTH 3402 [0.5]	Diseases of Aging

HLTH 3503 [0.5]	Disability and Chronic Health Conditions	
HLTH 4102 [0.5]	New Health Technologies	
HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases	
HLTH 4303 [0.5]	Fundamentals in Pharmacology and Toxicology	
HLTH 4401 [0.5]	Maternal and Perinatal Determinants of Health	
HLTH 4502 [0.5]	Disabilities and Disorders Related to Sensory Nervous System	
HLTH 4503 [0.5]	Trauma-related Disability and Impairments	
5. 0.5 credit from:		0.5
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 3501 [0.5]	Biomechanics	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
COMS 3412 [0.5]	Communication and Health	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
FOOD 4202 [0.5]	Micronutrients and Health	
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3403 [0.5]	Gender and Health	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4601 [0.5]	Environmental Pollution and Health	
HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
Total Credits		5.0

Concentration in Disability and Chronic Illness (5.5 credits)

1. 0.5 credit in:		0.5
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience	
2. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
CHEM 2203 [0.5]	Organic Chemistry I	
FOOD 2001 [0.5]	Principles of Nutrition	
HLTH 2004 [0.5]	Microbiology and Virology	
NEUR 2202 [0.5]	Neurodevelopment and Plasticity	
PSYC 2301 [0.5]	Introduction to Health Psychology	
3. 2.5 credits in:		2.5
BIOL 3305 [0.5]	Human and Comparative Physiology	
or BIOL 3306 [0.5]	Human Anatomy and Physiology	

BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
HLTH 3503 [0.5]	Disability and Chronic Health Conditions	
HLTH 4502 [0.5]	Disabilities and Disorders Related to Sensory Nervous System	
HLTH 4503 [0.5]	Trauma-related Disability and Impairments	
4. 0.5 credit from:		0.5
HLTH 4201 [0.5]	Applied Health Statistics	
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods	
5. 1.0 credit from:		1.0
BIOL 3501 [0.5]	Biomechanics	
COMS 2500 [0.5]	Communication and Science	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3402 [0.5]	Diseases of Aging	
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
6. 0.5 credit from:		0.5
BIOC 3008 [0.5]	Bioinformatics	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3202 [0.5]	Principles of Developmental Biology	
COMS 3412 [0.5]	Communication and Health	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4103 [0.5]	Food Safety Risk Assessment	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
FOOD 4202 [0.5]	Micronutrients and Health	
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3303 [0.5]	Molecular and Cellular Pathology II	
HLTH 3403 [0.5]	Gender and Health	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4303 [0.5]	Fundamentals in Pharmacology and Toxicology	
HLTH 4401 [0.5]	Maternal and Perinatal Determinants of Health	
HLTH 4601 [0.5]	Environmental Pollution and Health	
HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
Total Credits		5.5

Concentration in Environment and Health (6.0 credits)

1. 1.0 credit in:		1.0
BIOL 3305 [0.5]	Human and Comparative Physiology	
or BIOL 3306 [0.5]	Human Anatomy and Physiology	
CHEM 2800 [0.5]	Foundations for Environmental Chemistry	
2. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
FOOD 2001 [0.5]	Principles of Nutrition	
HLTH 2004 [0.5]	Microbiology and Virology	
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience	
PSYC 2301 [0.5]	Introduction to Health Psychology	
3. 2.5 credits in:		2.5
CHEM 3800 [0.5]	The Chemistry of Environmental Pollutants	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3303 [0.5]	Molecular and Cellular Pathology II	
HLTH 4303 [0.5]	Fundamentals in Pharmacology and Toxicology	
HLTH 4601 [0.5]	Environmental Pollution and Health	
4. 0.5 credit from:		0.5
HLTH 4201 [0.5]	Applied Health Statistics	
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods	
5. 1.0 credit from:		1.0
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
BIOL 4202 [0.5]	Mutagenesis and DNA Repair	
CHEM 4800 [0.5]	Atmospheric Chemistry	
COMS 2500 [0.5]	Communication and Science	
ECON 3804 [0.5]	Environmental Economics	
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3402 [0.5]	Diseases of Aging	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
6. 0.5 credit from:		0.5
BIOC 3008 [0.5]	Bioinformatics	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3202 [0.5]	Principles of Developmental Biology	
COMS 3412 [0.5]	Communication and Health	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4103 [0.5]	Food Safety Risk Assessment	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3403 [0.5]	Gender and Health	
HLTH 3503 [0.5]	Disability and Chronic Health Conditions	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4102 [0.5]	New Health Technologies	

HLTH 4301 [0.5]	Pandemics and Infectious Disease
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases
HLTH 4401 [0.5]	Maternal and Perinatal Determinants of Health
HLTH 4502 [0.5]	Disabilities and Disorders Related to Sensory Nervous System
HLTH 4503 [0.5]	Trauma-related Disability and Impairments
HLTH 4701 [0.5]	Knowledge Translation
HLTH 4901 [0.5]	Directed Studies in Health
Total Credits	6.0
Concentration in Global Health (5.5 credits)	
1. 0.5 credit in:	0.5
BIOL 3305 [0.5]	Human and Comparative Physiology
or BIOL 3306 [0.5]	Human Anatomy and Physiology
2. 0.5 credit from:	0.5
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology
CHEM 2203 [0.5]	Organic Chemistry I
FOOD 2001 [0.5]	Principles of Nutrition
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience
PSYC 2301 [0.5]	Introduction to Health Psychology
3. 2.5 credits in:	2.5
HLTH 2004 [0.5]	Microbiology and Virology
HLTH 3102 [0.5]	Indigenous Health in a Global World
HLTH 4101 [0.5]	Global Health Governance
HLTH 4301 [0.5]	Pandemics and Infectious Disease
HLTH 4401 [0.5]	Maternal and Perinatal Determinants of Health
4. 0.5 credit from:	0.5
HLTH 4201 [0.5]	Applied Health Statistics
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods
5. 1.0 credit from:	1.0
COMS 2500 [0.5]	Communication and Science
GEOG 3206 [0.5]	Health, Environment, and Society
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System
HLTH 3104 [0.5]	Regulatory Issues and Human Health
HLTH 3303 [0.5]	Molecular and Cellular Pathology II
HLTH 3401 [0.5]	Diseases of Childhood
HLTH 3402 [0.5]	Diseases of Aging
HLTH 3403 [0.5]	Gender and Health
HLTH 3503 [0.5]	Disability and Chronic Health Conditions
HLTH 4102 [0.5]	New Health Technologies
HLTH 4303 [0.5]	Fundamentals in Pharmacology and Toxicology
HLTH 4601 [0.5]	Environmental Pollution and Health
6. 0.5 credit from:	0.5
BIOC 3008 [0.5]	Bioinformatics
BIOL 3104 [0.5]	Molecular Genetics
COMS 3412 [0.5]	Communication and Health

ECON 4460 [0.5]	Health Economics
FOOD 3005 [0.5]	Food Microbiology
FOOD 4103 [0.5]	Food Safety Risk Assessment
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism
FOOD 4202 [0.5]	Micronutrients and Health
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases
HLTH 4502 [0.5]	Disabilities and Disorders Related to Sensory Nervous System
HLTH 4503 [0.5]	Trauma-related Disability and Impairments
HLTH 4701 [0.5]	Knowledge Translation
HLTH 4901 [0.5]	Directed Studies in Health
NEUR 3304 [0.5]	Hormones and Behaviour
NEUR 3401 [0.5]	Environmental Toxins and Mental Health
NEUR 3501 [0.5]	Neurodegeneration and Aging
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health
Total Credits	5.5

Concentration in Health Throughout the Lifespan (5.5 credits)

1. 0.5 credit in:	0.5
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience
2. 0.5 credit from:	0.5
BIOL 2303 [0.5]	Microbiology
CHEM 2203 [0.5]	Organic Chemistry I
FOOD 2001 [0.5]	Principles of Nutrition
HLTH 2004 [0.5]	Microbiology and Virology
NEUR 2202 [0.5]	Neurodevelopment and Plasticity
PSYC 2301 [0.5]	Introduction to Health Psychology
3. 2.5 credits in:	2.5
BIOL 3305 [0.5]	Human and Comparative Physiology
or BIOL 3306 [0.5]	Human Anatomy and Physiology
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology
HLTH 3401 [0.5]	Diseases of Childhood
HLTH 3402 [0.5]	Diseases of Aging
HLTH 4401 [0.5]	Maternal and Perinatal Determinants of Health
4. 0.5 credit from:	0.5
HLTH 4201 [0.5]	Applied Health Statistics
HLTH 4202 [0.5]	Health Program Evaluation Tools and Methods
5. 1.0 credit from:	1.0
COMS 2500 [0.5]	Communication and Science
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System
HLTH 3303 [0.5]	Molecular and Cellular Pathology II
HLTH 3403 [0.5]	Gender and Health
HLTH 3503 [0.5]	Disability and Chronic Health Conditions
HLTH 4102 [0.5]	New Health Technologies
HLTH 4302 [0.5]	Inflammatory and Endocrine Factors in Diseases

HLTH 4303 [0.5]	Fundamentals in Pharmacology and Toxicology	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
6. 0.5 credit from:		0.5
BIOC 3008 [0.5]	Bioinformatics	
BIOL 3104 [0.5]	Molecular Genetics	
BIOL 3202 [0.5]	Principles of Developmental Biology	
BIOL 3501 [0.5]	Biomechanics	
COMS 3412 [0.5]	Communication and Health	
ECON 4460 [0.5]	Health Economics	
FOOD 3005 [0.5]	Food Microbiology	
FOOD 4103 [0.5]	Food Safety Risk Assessment	
FOOD 4201 [0.5]	Advanced Nutrition and Metabolism	
FOOD 4202 [0.5]	Micronutrients and Health	
GEOG 3206 [0.5]	Health, Environment, and Society	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 4101 [0.5]	Global Health Governance	
HLTH 4301 [0.5]	Pandemics and Infectious Disease	
HLTH 4502 [0.5]	Disabilities and Disorders Related to Sensory Nervous System	
HLTH 4503 [0.5]	Trauma-related Disability and Impairments	
HLTH 4601 [0.5]	Environmental Pollution and Health	
HLTH 4701 [0.5]	Knowledge Translation	
HLTH 4901 [0.5]	Directed Studies in Health	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
Total Credits		5.5

Health Sciences B.H.Sc. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 2.5 credits in:		2.5
HLTH 1000 [0.5]	Fundamentals of Health	
HLTH 1002 [0.5]	Health Science Communication	
HLTH 2001 [0.5]	Health Research Methods and Skills	
HLTH 2002 [0.5]	Molecular and Cellular Pathology	
HLTH 2003 [0.5]	Social Determinants of Health	
2. 1.0 credit in:		1.0
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
STAT 2509 [0.5]	Introduction to Statistical Modeling II	
3. 0.5 credit from:		0.5
BIOL 3305 [0.5]	Human and Comparative Physiology	
BIOL 3306 [0.5]	Human Anatomy and Physiology	
4. 0.5 credit from:		0.5
BIOL 2303 [0.5]	Microbiology	
CHEM 2203 [0.5]	Organic Chemistry I	
FOOD 2001 [0.5]	Principles of Nutrition	

NEUR 2201 [0.5]	Cellular and Molecular Neuroscience	
PSYC 2301 [0.5]	Introduction to Health Psychology	
5. 2.5 credits from:		2.5
HLTH 2004 [0.5]	Microbiology and Virology	
HLTH 3101 [0.5]	Global Health	
HLTH 3102 [0.5]	Indigenous Health in a Global World	
HLTH 3103 [0.5]	Health Policy and Canada's Health Care System	
HLTH 3104 [0.5]	Regulatory Issues and Human Health	
HLTH 3201 [0.5]	Epidemiology	
HLTH 3302 [0.5]	Immunity and Immune-Related Disorders	
HLTH 3401 [0.5]	Diseases of Childhood	
HLTH 3402 [0.5]	Diseases of Aging	
HLTH 3404 [0.5]	Psychosocial and Biological Interactions in Health	
HLTH 3503 [0.5]	Disability and Chronic Health Conditions	

B. Credits Not Included in the Major CGPA (8.0 credits)

6. 2.5 credits in:		2.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
MATH 1007 [0.5]	Elementary Calculus I	
7. 1.0 credit from:		1.0
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
8. 0.5 credit from:		0.5
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues	
PHIL 2408 [0.5]	Bioethics	
9. 4.0 credits in free electives		4.0
Total Credits		15.0

Journalism with Concentration in Health Sciences

B.J. Honours (20.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in:		1.0
JOUR 1001 [0.5]	Foundations: Journalism in Context	
JOUR 1002 [0.5]	Foundations: Practicing Journalism in a Diverse Society	
2. 2.0 credits in:		2.0
JOUR 2201 [1.0]	Fundamentals of Reporting	
JOUR 2202 [0.5]	Digital Journalism Toolkit	
JOUR 2501 [0.5]	Media Law	
3. 2.5 credits in:		2.5
JOUR 3207 [0.5]	Audio Journalism	
JOUR 3208 [0.5]	Video Journalism	
JOUR 3225 [0.5]	Reporting in Depth	
JOUR 3235 [0.5]	Digital Journalism	
JOUR 3300 [0.5]	Media Ethics in a Digital World	

4. 0.5 credit in:	0.5
JOUR 4001 [0.5] Journalism Now - and Next	
5. 0.5 credit from - Journalism Publications:	0.5
JOUR 4003 [0.5] The Digital Hub: Advanced Multimedia	
JOUR 4004 [0.5] The Digital Hub: Advanced Audio	
JOUR 4005 [0.5] The Digital Hub: Advanced Video	
6. 0.5 credit from - Specialized Journalism:	0.5
JOUR 4303 [0.5] Specialized Journalism: Health and Science	
JOUR 4304 [0.5] Specialized Journalism: Environment and Science	
7. 1.0 credit from - Professional Skills and/or Investigating Journalism:	1.0
Professional Skills	
JOUR 4400 [0.5] Professional Skills: Special Topic	
JOUR 4401 [0.5] Professional Skills: Data Storytelling	
JOUR 4402 [0.5] Professional Skills: Longform Writing	
JOUR 4403 [0.5] Professional Skills: Strategic Communication	
JOUR 4404 [0.5] Professional Skills: Freelancing for Media Professionals	
Investigating Journalism	
JOUR 4500 [0.5] Investigating Journalism: Special Topic	
JOUR 4501 [0.5] Investigating Journalism: Gender, Identity and Inequality	
JOUR 4502 [0.5] Investigating Journalism: Journalism and Conflict	
JOUR 4503 [0.5] Investigating Journalism: Journalism, Indigenous Peoples and Canada	
JOUR 4504 [0.5] Investigating Journalism: The Media and International Development	
JOUR 4505 [1.0] Investigating Journalism: The Power and Politics of Government	
B. Credits Not Included in the Major CGPA (12.0 credits)	
8. 1.0 credit in:	1.0
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
9. 2.0 credits in Health Science courses:	2.0
HLTH 1001 [0.5] Principles of Health I	
HLTH 2001 [0.5] Health Research Methods and Skills	
HLTH 2002 [0.5] Molecular and Cellular Pathology	
HLTH 2003 [0.5] Social Determinants of Health	
10. 1.0 credit in a capstone course:	1.0
NSCI 4901 [1.0] Science Journalism Independent Project	
11. 2.0 credit in electives in Health Sciences, including courses from Biology, Neuroscience and Psychology	2.0
12 a. 0.5 credit from:	0.5
HIST 1301 [0.5] Conflict and Change in Early Canadian History	
HIST 1302 [0.5] Rethinking Modern Canadian History	

HIST 2301 [0.5] Canadian Political History	
HIST 2304 [1.0] Social and Cultural History of Canada (See Item 13 below)	
HIST 2311 [0.5] Environmental History of Canada (b. 0.5 credit from:)	
b. 0.5 credit from:	0.5
INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters	
INDG 2011 [0.5] Contemporary Indigenous Studies	
13. 5.0 credits in free electives. Students who take HIST 2304 to fulfill Item 12a will have 4.5 credits in free electives. Free elective credits may include JOUR courses in the 4300 series of courses, 4400 series of courses and 4500 series of courses, JOUR 4003, JOUR 4004 and JOUR 4005.	5.0
Total Credits	20.0

Minor in Health Sciences (4.0 credits)

This minor is open to all undergraduate degree students not in the Health Sciences program. Only students pursuing undergraduate programs requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits towards their degree with a minimum Overall CGPA of 8.0 may be admitted to the Minor in Health Sciences.

Requirements:

1. 2.5 credits in:	2.5
HLTH 1001 [0.5] Principles of Health I	
HLTH 2001 [0.5] Health Research Methods and Skills	
HLTH 2002 [0.5] Molecular and Cellular Pathology	
HLTH 2003 [0.5] Social Determinants of Health	
HLTH 2020 [0.5] Principles of Health II	
2. 1.5 credits in HLTH at the 3000-level or higher	1.5
3. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Regulations

In addition to the program requirements described here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Students should consult with the department when planning their program and selecting courses.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages

are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Health Sciences (B.H.Sc.) (Honours)
- Bachelor of Health Sciences (B.H.Sc.)

Admission Requirements

First Year

B.H.Sc. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Biology, Chemistry, Earth and Space Sciences, or Physics. Calculus and Vectors is strongly recommended. A 4U course in English is recommended.

B.H.Sc.

No direct entry; access is restricted.

Advanced Standing

B.H.Sc. (Honours)

The program maintains a number of places for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA of 9.00 (B+) or higher.

B.H.Sc.

No direct entry. Access is restricted to students in the B.H.Sc. (Honours) program who apply to transfer.

Health Sciences (HLTH) Courses

HLTH 1000 [0.5 credit]

Fundamentals of Health

Introduction to what comprises a healthy body and mind, and what leads to illness and disease. Biomedical, psychosocial, and epidemiological approaches to current issues in the field of health. Policy and cultural/environmental contexts.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 1001.

Lectures three hours a week and group one hour a week.

HLTH 1001 [0.5 credit]

Principles of Health I

Health and illness will be considered from an interdisciplinary perspective, including biomedical, cultural, psychosocial and environmental.

Precludes additional credit for HLTH 1000.

Lecture three hours a week.

HLTH 1002 [0.5 credit]

Health Science Communication

Introduction to using library, database and/or bioinformatics resources to develop informed verbal, non-verbal and written communication within the context of healthcare, public health and health research. Concepts in ethical scholarship, proper use of sources and plagiarism will be introduced.

Lecture three hours a week.

HLTH 2001 [0.5 credit]

Health Research Methods and Skills

An introduction to quantitative and qualitative methods and designs in health sciences research. Basic research skills will also be provided, including regulatory aspects of conducting research, information literacy skills, evaluating published research and other sources of evidence in the digital age.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 1000 or HLTH 1001.

Lecture three hours a week, lab/workshop two hours a week.

HLTH 2002 [0.5 credit]

Molecular and Cellular Pathology

Introduction to the causes, natural history, and pathophysiology of common human diseases of various organ systems. Diseases related to structural and functional changes at the molecular, cellular and organ level.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 1000 and BIOL 1103 or HLTH 2020.

Lecture three hours a week.

HLTH 2003 [0.5 credit]**Social Determinants of Health**

Overview of the social determinants of health, ranging from early life experiences, poverty, social status, migration, and the physical environment. The relation between social determinants and environmental vulnerabilities, health behaviours, illness prevalence, treatment outcomes, and access to health care.

Prerequisite(s): HLTH 1000 or HLTH 1001.

Lecture three hours a week.

HLTH 2004 [0.5 credit]**Microbiology and Virology**

Introduction to the pathogenic microorganisms, including fungal, bacterial, viral and prion. Biochemical, genetic, pathological and epidemiological aspects in the human context; their interaction with host defense systems and strategies for antibiotic and vaccine development.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 3301 (no longer offered).

Prerequisite(s): HLTH 1000 and BIOL 1103 or permission of the department.

Lecture three hours a week, and laboratory three hours a week.

HLTH 2020 [0.5 credit]**Principles of Health II**

An overview of the history of medicine, its relationship to society, medical and health terminology, introduction to organ systems, diseases, illnesses and their diagnoses, current events in health and medicine.

Prerequisite(s): HLTH 1001 or permission of the department.

Lecture three hours a week.

HLTH 3101 [0.5 credit]**Global Health**

Overview of issues in global health with focus on low- and middle-income countries. Key indicators and determinants of global health, implementation and evaluation of global programs, challenges of research and interventions in under served areas, and key players in addressing global health issues.

Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.

Lecture and seminar, three hours per week.

HLTH 3102 [0.5 credit]**Indigenous Health in a Global World**

The health conditions of Indigenous peoples in different regions of the world; social and biological factors that contribute to greater risk and poor health; strategies of Indigenous peoples to restore health to their peoples.

Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.

Lecture and seminar three hours per week.

HLTH 3103 [0.5 credit]**Health Policy and Canada's Health Care System**

The history of Canada's health care system. The model of financing and intergovernmental responsibilities. Current and emerging policy debates facing our health care system, and the role of scientific evidence in decision-making and policy development.

Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.

Lecture and seminar three hours per week.

HLTH 3104 [0.5 credit]**Regulatory Issues and Human Health**

The general principles of health regulatory policies in Canada. The role of scientific evidence in developing legislation and regulations at different levels, including probable levels of risk, standards of evidence, cost-benefit analysis, ethical considerations, psychosocial factors influencing risk management and compliance, and evolving technologies.

Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.

Lecture and seminar three hours a week.

HLTH 3201 [0.5 credit]**Epidemiology**

Basic concepts of epidemiologic study designs and measures; inferences that are fundamental to the identification of causes and prevalence of diseases. Specialized issues within epidemiology including gene-environment interactions and the clustering of specific disease phenotypes.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 2507 and HLTH 2001, or permission of the department.

Lecture three hours a week, lab/workshop two hours a week.

HLTH 3302 [0.5 credit]**Immunity and Immune-Related Disorders**

Basic processes relevant to the immune system; the relationship between immune activity and functioning as related to the development of particular pathologies, such as virally-related illness, autoimmune disorders, inflammatory illnesses, and interactions with social and economic factors that promote immune-related disturbances.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 2002 and BIOL 2200 or permission of the department.

Lecture three hours a week, laboratory four hours a week. Labs require regular participation outside of the scheduled lab time.

HLTH 3303 [0.5 credit]**Molecular and Cellular Pathology II**

Advanced concepts in cell signaling and function, cell injury and death, tissue structure and wound healing and repair. This course will integrate genetic, biochemical and physiological mechanisms that contribute to health and disease.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 2002.

Lecture three hours a week, lab four hours a week.

HLTH 3401 [0.5 credit]**Diseases of Childhood**

Epidemiological, psychological and physiological basis for disease in childhood and adolescence. Topics will be discussed from a global and Canadian perspective and include the medicalization of these diseases.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.

Lecture three hours a week.

HLTH 3402 [0.5 credit]**Diseases of Aging**

Aging is accompanied by increased illness related to cardiovascular, immune and neurodegenerative processes. This course assesses the fundamental mechanisms that determine these pathological conditions. Molecular mechanisms and psychosocial determinants; intervention and therapeutic strategies.

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of department.

Lecture three hours a week.

HLTH 3403 [0.5 credit]**Gender and Health**

The role of gender on psychosocial and biological mechanisms that alter the course of disease and treatment; health issues unique to women (e.g., reproductive and maternal health); the role of gender across cultures.

Prerequisite(s): HLTH 2002 and HLTH 2003, or permission of the department.

Lecture and seminar three hours a week.

HLTH 3404 [0.5 credit]**Psychosocial and Biological Interactions in Health**

The psychosocial and biological mechanisms that interact to influence health outcomes. Cultural, political, socioeconomic, and psychological factors that can impact the biological mechanisms underlying both mental and physical health; epigenetic and genetic alterations; implications for psychosocial interventions.

Precludes additional credit for HLTH 4402 (no longer offered).

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.

Lecture and seminar three hours a week.

HLTH 3503 [0.5 credit]**Disability and Chronic Health Conditions**

An interdisciplinary view of disability and chronic health conditions, including risk factors, prevalence, and the trajectory of such conditions. Functional impact based on life stage. Strategies for health promotion, prevention, accommodations, treatment, and rehabilitation.

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.

Lecture three hours a week.

HLTH 3901 [0.5 credit]**Emerging Issues in Health Sciences I**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses, and for skills development including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3902 [0.5 credit]**Emerging Issues in Health Sciences II**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3903 [0.5 credit]**Emerging Issues in Health Sciences III**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3904 [0.5 credit]**Emerging Issues in Health Sciences IV**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3905 [0.5 credit]**Emerging Issues in Health Sciences V**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 4101 [0.5 credit]**Global Health Governance**

Contemporary issues and debates in global health governance and effects on health monitoring and outcomes at individual and population levels. Historical patterns of global health, its regulatory framework, principal coordinating mechanisms and emerging challenges, and implications of globalization and international trade policies.

Prerequisite(s): HLTH 3101, or permission of the department.

Lecture and seminar three hours per week.

HLTH 4102 [0.5 credit]**New Health Technologies**

Overview of new and emerging health technologies, including medical and assistive devices, diagnostics and screening, genetics, reproduction, tissue regeneration, imaging, and health informatics. Health technology assessment methods and issues. Regulatory, ethical and social implications; considerations in the developing world.

Prerequisite(s): HLTH 1000 or HLTH 1001 and third-year standing or higher, or permission of the department.

Also offered at the graduate level, with different requirements, as HLTH 5350, for which additional credit is precluded.

Lecture and seminar three hours a week.

HLTH 4201 [0.5 credit]**Applied Health Statistics**

Statistics concepts and procedures used in the analysis of health data; techniques commonly used to analyze data collected from different types of epidemiological and experimental study designs; how to interpret and present statistical findings.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 3201 and STAT 2507 or permission of the department.

Lecture three hours a week, lab/workshop two hours a week.

HLTH 4202 [0.5 credit]**Health Program Evaluation Tools and Methods**

Introduction to concepts, principles and processes of evaluating health care programs and interventions. Methodological tools including needs assessment, project management skills, use of health information management databases. Issues in communication with stakeholders, including change management and decision making.

Prerequisite(s): HLTH 2001 and STAT 2507 or permission of the department.

Lecture and seminar three hours a week.

HLTH 4301 [0.5 credit]**Pandemics and Infectious Disease**

Factors that influence disease processes, including viruses, bacteria, protozoa, fungi and infectious agents, how these agents come to have the effects that they do in a given individual, how they spread within and how to limit their spread.

Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department.

Lecture three hours a week.

HLTH 4302 [0.5 credit]**Inflammatory and Endocrine Factors in Diseases**

Inflammatory and hormonal processes and their relevance to disease states. Immune-related disorders, heart disease and stroke, metabolic syndrome, diabetes, psychiatric conditions, and neurodegenerative disorders. The contribution of psychosocial and genetic factors to diseases.

Prerequisite(s): HLTH 3302 or BIOL 4200 or BIOC 4200 or permission of the department.

Lecture three hours a week.

HLTH 4303 [0.5 credit]**Fundamentals in Pharmacology and Toxicology**

Introduction to pharmacological principles, xenobiotics and their interactions within living systems. Topics include biological mechanisms of action of xenobiotics on macromolecules, cells and their effects on various organ systems. Social, legal and governmental policies will be discussed.

Prerequisite(s): HLTH 3303 or permission of the department.

Lecture and seminar three hours a week.

HLTH 4304 [0.5 credit]**Host-Pathogen Interactions**

Advanced cellular and molecular mechanisms governing host-pathogen interactions and their contribution to disease. Exploration of immune signaling and recognition, virulence factors, antimicrobial resistance and research techniques used in this field.

Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department.

Also offered at the graduate level, with different requirements, as HLTH 5403, for which additional credit is precluded.

Seminar three hours per week.

HLTH 4401 [0.5 credit]**Maternal and Perinatal Determinants of Health**

The integrated genetic, physiologic and environmental events occurring in early life that impact pregnancy, fetal/infant development and disease risk throughout the lifecourse, with a focus on the mechanisms driving these events.

Prerequisite(s): HLTH 2003 and HLTH 3302 or permission of the department.

Lecture three hours a week.

HLTH 4502 [0.5 credit]**Disabilities and Disorders Related to Sensory Nervous System**

Congenital and acquired disabilities related to sensory organs and processes, including visual and hearing impairments, vestibular and balance disorders, reflex problems, and others. Interdisciplinary approach to causes, mechanisms, accessibility, accommodations and interventions.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 3501 (no longer offered).

Prerequisite(s): Either 1) HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306), or 2) NEUR 3206, or 3) permission of the department.

Lecture three hours a week, workshop two hours a week.

HLTH 4503 [0.5 credit]**Trauma-related Disability and Impairments**

Biomedical and psychosocial factors associated with trauma-related illnesses, stressors, injuries and disabilities, including traumatic brain injury, spinal cord injury, fractures, amputations, burns, post-traumatic stress disorder, and others. Short- and long-term considerations for care and rehabilitation.

Precludes additional credit for HLTH 3502 (no longer offered).

Prerequisite(s): HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306) or permission of the department.

Lecture three hours a week.

HLTH 4601 [0.5 credit]**Environmental Pollution and Health**

Introduction to environmental and occupational health; detection, assessment, management and mitigation of chemical, physical and biological hazards.

Prerequisite(s): HLTH 3104 or permission of the department.

Lecture and seminar three hours a week.

HLTH 4701 [0.5 credit]**Knowledge Translation**

The application of knowledge translation in the formulation of policy and the development of skills required to maximize the impact of scientific findings through real world programs and policies and communication skills for diverse audiences.

Prerequisite(s): fourth-year standing and permission of the Department of Health Science and permission of the instructor.

Also offered at the graduate level, with different requirements, as HLTH 5300, for which additional credit is precluded.

Seminar three hours a week.

HLTH 4901 [0.5 credit]**Directed Studies in Health**

Independent study, open to third- and fourth-year students to explore a particular health related topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the B.H.Sc. program, in addition to permission of the Faculty supervisor and the Department of Health Sciences.

HLTH 4906 [1.0 credit]**Capstone course – Research Essay**

Independent critical review and research proposal on a health- related topic, using library, database and/or bioinformatics resources, under the supervision of the course instructor. Seminar topics include identification and critical review of resources, development of scientific writing skills, and formulation of health science-related research.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4907, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.

Prerequisite(s): fourth-year standing in the B.H.Sc. Honours and permission of the Department of Health Sciences.

Lecture/seminar three hours a week.

HLTH 4907 [1.0 credit]

Capstone Course – Group Research Project

A collaborative project on a health related topic. Students, working together as a team, will complete a research project and develop communication and research skills under the supervision of the faculty supervisor. Evaluation will be based on a written report and oral presentation.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4906, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.

Prerequisite(s): fourth-year standing in the B.H.Sc.

Honours program, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 9.0, and permission of the Faculty supervisor and the Department of Health Sciences.

Seminars three hours a week as scheduled by the course instructor; other hours as arranged with the Faculty Adviser.

HLTH 4909 [1.0 credit]

Capstone Course – Field Placement and Research Project

Field placement providing practical experience in a health-related field. Placements may be in institutional or community settings, governmental or non-governmental organizations. Sites may vary each year. Evaluation based on a written report and an oral presentation.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908 (no longer offered), HLTH 4910.

Prerequisite(s): fourth-year standing in B.H.Sc. Honours; and one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905; and a minimum Overall and Major CGPA of 9.0; and permission of the Department of Health Sciences.

Schedules may vary depending on the field placement site, but students are required to spend a minimum of eight hours per week on-site and attend required seminars as arranged by the course instructor.

HLTH 4910 [1.0 credit]

Honours Individual Research Thesis

An independent health related research project under the direct supervision of a faculty member. Evaluation will be based on a written thesis and oral poster presentation (oral or poster).

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908, HLTH 4909.

Prerequisite(s): fourth-year standing in B.Sc. Honours Health Sciences, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA

of at least 10.0, and permission of the Faculty advisor and the Department of Health Sciences. Permission will depend, in part, on capacity, such that meeting the minimum requirements does not guarantee enrollment in this research thesis course.

History

This section presents the requirements for programs in:

- History B.A. Honours
- History B.A. Combined Honours
- History with Concentration in Public History B.A. Honours
- History B.A.
- Minor in History
- Specialization in Global and Transnational History B.G.In.S. Honours
- Stream in Global and Transnational History B.G.In.S.

Program Requirements

Course Categories

The following field definitions are used to classify history courses:

1. the world before 1750 (Field a)
2. modern Europe (Field b)
3. North America (Field c)
4. Asia, Africa, the Caribbean, and Latin America (Field d)
5. ideas, culture, and society (Field e)

The field classification of each course is included with the course description. Courses that do not have a history field classification cannot be used to meet the history field requirements of degree programs in History.

History

B.A. Honours (20.0 credits)

The requirements for this program are modified when the Honours Research Project is included.

Normal Pattern

A. Credits Included in the Major CGPA (10.0 credits)

1. 7.0 credits in history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:	7.0
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- a. 1.0 credit at the 1000-level or FYSM 1405
- b. 2.0 credits at the 2000-level
- c. 3.0 credits at the 3000-level
- d. 1.0 credit at the 2000- or 3000-level.

2. 0.5 credit in:	0.5
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HIST 2809 [0.5]	The Historian's Craft
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3. 0.5 credit from:	0.5
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- | | |
|-----------------|-----------------------------------|
| HIST 3810 [0.5] | Historical Theory |
| HIST 3820 [0.5] | Explorations in Historical Theory |

4. 2.0 credits in 4000-level history seminars	2.0
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B. Credits Not Included in the Major CGPA (10.0 credits)

5. 8.0 credits in electives not in HIST	8.0
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6. 2.0 credits in free electives (may be HIST)	2.0
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Total Credits	20.0
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Honours Research Project Pattern

A. Credits Included in the Major CGPA (10.0 credits)

1. 6.0 credits in history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:	6.0
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- a. 1.0 credit at the 1000-level or FYSM 1405
- b. 2.0 credits at the 2000-level
- c. 2.0 credits at the 3000-level

d. 1.0 credit at the 2000- or 3000-level	
2. 0.5 credit in:	0.5
HIST 2809 [0.5] The Historian's Craft	
3. 0.5 credit from:	0.5
HIST 3810 [0.5] Historical Theory	
HIST 3820 [0.5] Explorations in Historical Theory	
4. 2.0 credits in 4000-level history seminars	2.0
5. 1.0 credits in:	1.0
HIST 4910 [1.0] Honours Research Project	
B. Credits Not Included in the Major CGPA (10.0 credits)	
6. 8.0 credits in electives not in HIST	8.0
7. 2.0 credits in free electives (may be HIST)	2.0
Total Credits	20.0

Notes:

- Students should endeavour to have one course at the 2000-or 3000-level in the area of each fourth-year seminar.

History

B.A. Combined Honours (20.0 credits)

A. Credits Included in the History Major CGPA (6.0 credits)

- 4.0 credits in** history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:

- 1.0 credit in HIST at the 1000-level or FYSM 1405
- 2.0 credits in HIST at the 2000-level
- 1.0 credit in HIST at the 3000-level

- 0.5 credit in:** 0.5
HIST 2809 [0.5] The Historian's Craft

- 0.5 credit from:** 0.5
HIST 3810 [0.5] Historical Theory
HIST 3820 [0.5] Explorations in Historical Theory

- 1.0 credit in** 4000-level history seminar(s) 1.0

B. Additional Credit Requirements (14.0 credits) 14.0

5. The requirements of the other discipline must be satisfied

6. Sufficient free elective credits to make 20.0 credits for the degree.

Total Credits 20.0

History with Concentration in Public History

B.A. Honours (20.0 credits)

A. Credits included in the Major CGPA (11.0 credits)

- 5.0 credits in** history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:

- 1.0 credit at the 1000-level
- 1.0 credit at the 2000-level
- 2.0 credit at the 3000-level
- 1.0 credit at the 2000- or 3000-level

- 0.5 credit in:** 0.5
HIST 2809 [0.5] The Historian's Craft

- 0.5 credit in:** 0.5
HIST 2811 [0.5] Public History from Memory to Museums

- 0.5 credit from:** 0.5

HIST 3810 [0.5] Historical Theory	
HIST 3820 [0.5] Explorations in Historical Theory	

- 0.5 credit in:** 0.5
HIST 3809 [0.5] Historical Representations

- 0.5 credit from:** 0.5
HIST 3807 [0.5] Practicum in History

- 0.5 credit from:** 0.5
HIST 3815 [0.5] Group Practicum

- 1.5 credits from** (with at least 1.0 credit at the 3000-level): 1.5

- HIST 2812 [0.5] Special Subject in Public History

- HIST 3001 [0.5] History at the Movies

- HIST 3507 [0.5] An Immigrant's Guide to Canada

- HIST 3812 [0.5] Digital History

- HIST 3814 [0.5] Crafting Digital History

- HIST 3807 [0.5] Practicum in History (if not used toward Item 6, above)

- HIST 3815 [0.5] Group Practicum (if not used toward Item 6, above)

- HIST 3909 [0.5] Topic in Public History
- 0.5 credit from approved electives may be counted towards this requirement.

- 2.0 credits in** 4000-level history seminars with at least 0.5 credits from: 2.0

- HIST 4916 [0.5] Topic in Public History

- HIST 4920 [1.0] Seminar in Public History

B. Credits Not Included in the Major CGPA (9.0 credits)

- 8.0 credits in** electives not in HIST 8.0

- 1.0 credit in** free electives (may be HIST) 1.0

Total Credits 20.0

History

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

- 7.0 credits in** history including 0.5 credit in each of four of the five history fields below the 4000-level and satisfying:

- 1.0 credit in HIST at the 1000-level or FYSM 1405
- 2.5 credits in HIST at the 2000-level
- 0.5 credit in HIST 2809
- 0.5 credit from

- HIST 3810 [0.5] Historical Theory

- HIST 3820 [0.5] Explorations in Historical Theory

- 2.5 credits in HIST at the 3000-level

B. Credits Not Included in the Major CGPA (8.0 credits)

- 6.0 credits not in** HIST 6.0

- 2.0 credit in** free electives (may be HIST) 2.0

Total Credits 15.0

Minor in History (4.0 credits)

Open to all undergraduate degree students not in history programs or the B.G.In.S. Specialization or Stream in Global and Transnational History.

Requirements

- 1.0 credit in** HIST at the 1000 level or FYSM 1405 1.0

- 1.0 credit in** HIST at the 2000 level 1.0

- 1.0 credit in** HIST at the 3000 level 1.0

- 1.0 credit in** HIST from any combination of courses at the 2000, 3000, or 4000 level 1.0

5. The remaining requirements of the major discipline(s) and degree must be satisfied

Total Credits **4.0**

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global and Transnational History

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses **4.5**

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization

a. 1.0 credit in: Foundations **1.0**

HIST 1707 [1.0]	World History
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b. 1.0 credit from: Regional History **1.0**

HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2312 [0.5]	History of the Indian Ocean World
HIST 2506 [0.5]	Introduction to Women's and Gender History
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
HIST 2707 [0.5]	Modern Africa
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 2802 [0.5]	War and Society in Modern Europe, 1789-1914
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950

c. 4.0 credits from: Themes in History **4.0**

HIST 2000 [1.0]	Medieval Europe
HIST 2204 [0.5]	Early Modern Europe 1350-1650
HIST 2206 [0.5]	Early Modern Europe 1600-1800
HIST 2809 [0.5]	The Historian's Craft
HIST 3001 [0.5]	History at the Movies
HIST 3106 [0.5]	Social History of Sexuality
HIST 3109 [0.5]	Social History of Alcohol
HIST 3111 [0.5]	History of Humanitarian Aid
HIST 3115 [0.5]	Childhood and Youth in History

HIST 3120 [0.5]	History of the Body
HIST 3216 [0.5]	The Scientific Revolution
HIST 3217 [0.5]	Empire and Globalization
HIST 3310 [0.5]	Animals in History
HIST 3304 [0.5]	Canada-United States Relations
HIST 3306 [0.5]	Canada's International Policies
HIST 3500 [0.5]	Migration and Diaspora in Canada
HIST 3510 [0.5]	Indigenous Peoples of Canada
HIST 3511 [0.5]	Themes in Indigenous History
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions
HIST 3715 [0.5]	Themes in South Asian History
HIST 3717 [0.5]	Gender and Sexuality in Africa
HIST 3800 [0.5]	International History 1914-41
HIST 3801 [0.5]	International History 1941-90
HIST 3809 [0.5]	Historical Representations
HIST 3810 [0.5]	Historical Theory
HIST 3820 [0.5]	Explorations in Historical Theory
HIST 3905 [0.5]	Topics in International History
HIST 3906 [0.5]	Topics in World History
HIST 3907 [0.5]	Transnational Topic
HIST 3908 [0.5]	Thematic Topic

d. 0.5 credit in: Advanced Core **0.5**

HIST 3813 [0.5]	Problems in Global and Transnational Histories
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e. 1.0 credit from: Honours Seminars **1.0**

HIST 4700 [1.0]	Seminar in World History
HIST 4802 [1.0]	Seminar in International History
HIST 4805 [1.0]	Seminar on a Transnational or Thematic Topic

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in free electives **8.0**

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits **20.0**

Stream in Global and Transnational History B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses **4.0**

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream **4.0**

a. Foundations	
HIST 1707 [1.0]	World History
b. Regional History	

HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2312 [0.5]	History of the Indian Ocean World
HIST 2506 [0.5]	Introduction to Women's and Gender History
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
HIST 2707 [0.5]	Modern Africa
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 2802 [0.5]	War and Society in Modern Europe, 1789-1914
HIST 2803 [0.5]	War and Society in Modern Europe, 1914-1950
c. Themes in History	
HIST 2000 [1.0]	Medieval Europe
HIST 2204 [0.5]	Early Modern Europe 1350-1650
HIST 2206 [0.5]	Early Modern Europe 1600-1800
HIST 2809 [0.5]	The Historian's Craft
HIST 3001 [0.5]	History at the Movies
HIST 3106 [0.5]	Social History of Sexuality
HIST 3109 [0.5]	Social History of Alcohol
HIST 3111 [0.5]	History of Humanitarian Aid
HIST 3115 [0.5]	Childhood and Youth in History
HIST 3120 [0.5]	History of the Body
HIST 3216 [0.5]	The Scientific Revolution
HIST 3217 [0.5]	Empire and Globalization
HIST 3310 [0.5]	Animals in History
HIST 3304 [0.5]	Canada-United States Relations
HIST 3306 [0.5]	Canada's International Policies
HIST 3500 [0.5]	Migration and Diaspora in Canada
HIST 3510 [0.5]	Indigenous Peoples of Canada
HIST 3511 [0.5]	Themes in Indigenous History
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions
HIST 3715 [0.5]	Themes in South Asian History
HIST 3717 [0.5]	Gender and Sexuality in Africa
HIST 3800 [0.5]	International History 1914-41
HIST 3801 [0.5]	International History 1941-90
HIST 3809 [0.5]	Historical Representations
HIST 3810 [0.5]	Historical Theory
HIST 3820 [0.5]	Explorations in Historical Theory
HIST 3905 [0.5]	Topics in International History
HIST 3906 [0.5]	Topics in World History
HIST 3907 [0.5]	Transnational Topic
HIST 3908 [0.5]	Thematic Topic
d. Advanced Core	
HIST 3813 [0.5]	Problems in Global and Transnational Histories
B. Credits Not Included in the Major CGPA (7.0 credits):	
3. 7.0 credits in free electives	7.0
C. Additional Requirements	
4. The Language requirement must be met.	
Total Credits	15.0

Regulations

First Year Courses

There is a limit on the number of history courses permitted in a B.A. degree in History. To avoid the course designation of "Extra to Degree (ETD)" students should not exceed the maximum of two 1000-level history courses (including FYSM courses designated with topics in history).

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM,

GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described

in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

B.G.In.S. Regulations

The regulations presented in this section apply to all Bachelor of Global and International Studies programs.

In addition to the program requirements and requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.G.In.S degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit of FYSM and can only register in a FYSM while they have first-year standing in their B.G.In.S program. Students who have completed the Enriched Support Program (ESP) or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Change of Specialization or Stream Within the B.G.In.S Degree

Students may change specialization or stream, or change from/to specialization or stream within the B.G.In.S. during the first or subsequent years of study if, upon entry to the new specialization or stream, they would be in good academic standing.

Minors

Students may apply to the Registrar's Office to be admitted to a minor during their first or subsequent years of study. Acceptance into a minor is normally subject to meeting the minimum CGPA requirements described in Section 3.1.9 of the *Academic Regulations of the University*, as well as any specific requirements of the intended minor as published in the relevant Calendar entry. B.G.In.S. Honours students may take a maximum of one minor. B.G.In.S. students may take a maximum of two minors.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study.

Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work

terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager

9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours History: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours History;
2. Obtained and maintained an overall minimum CGPA of 8.0;
3. Have obtained second-year standing;
4. Be registered as a full-time student.

Students in B.A. Honours History must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: HIST 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	W	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W (O)		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow

the recommendations will not be disadvantaged in the admission process.

Degrees

- Bachelor of Global and International Studies (B.G.In.S.) (Honours)
- Bachelor of Global and International Studies (B.G.In.S.)

Admission Requirements

First Year

B.G.In.S. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*) and a FIF4U course for students applying to the Specialization in French and Francophone Studies. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

B.G.In.S.

No direct entry; access is restricted.

Advanced Standing

B.G.In.S. (Honours)

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and stream selected. Students who have completed more than 7.0 credits of post-secondary study are not typically considered for transfer.

B.G.In.S.

No direct entry. Access is restricted to students in the B.G.In.S. (Honours) program who apply to transfer.

History (HIST) Courses

Please note: not all of the following courses are offered in a given year. Consult the public class schedule at Carleton Central for the most up-to-date offerings. For further details concerning courses, see the departmental website at carleton.ca/history.

4000-level History **seminars** have limited enrolment. Priority in enrolment is given to students in History Honours and Combined Honours programs.

Topics in 4000-level History **seminars** change from year to year. Current topics are posted on the department's website at carleton.ca/history

HIST 1001 [1.0 credit]

The Making of Europe

A survey of the major events, ideas and movements that have shaped Europe from Antiquity to the 21st century. (Field a or b).

Lectures/groups three hours a week.

HIST 1002 [1.0 credit]**Europe in the 20th Century**

An introduction to some of the major ideological, political, diplomatic, military, social, cultural and economic developments that have shaped contemporary Europe. (Field b).

Lectures/groups three hours a week.

HIST 1010 [0.5 credit]**History of Northern Canada**

A historical introduction to northern Canada from pre-contact times to the present. Open only to students in the Nunavut Public Administration certificate program. (Field c).

HIST 1301 [0.5 credit]**Conflict and Change in Early Canadian History**

This course explores how colonialism and conflict altered peoples, cultures, and places in what came to be called Canada from pre-contact to the first age of industrialization. Course covers subjects including imperialism, Indigenous-settler relations, slavery, migration, and government, providing context for contemporary issues. (Field c).

Precludes additional credit for HIST 1300 (no longer offered).

Lectures/groups three hours a week.

HIST 1302 [0.5 credit]**Rethinking Modern Canadian History**

This course explores how major political, economic, legal, social, and cultural changes shaped modern-day Canada from the late 1800s to the present. It provides context for contemporary issues, including colonialism, redress, reconciliation, race relations, migration and urbanization, globalization, technology, and the environment. (Field c).

Precludes additional credit for HIST 1300 (no longer offered).

Lectures/groups three hours a week.

HIST 1707 [1.0 credit]**World History**

This course will follow the global community from 1400 to the present exploring how global connections, movements and trends have shaped our world with a particular focus on the non-western world. (Field a or d).

Lectures/groups three hours a week.

HIST 1900 [0.5 credit]**Topics in History**

A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic).

Lectures/groups three hours a week.

HIST 2000 [1.0 credit]**Medieval Europe**

The history of medieval Europe from the fourth to the fifteenth century. (Field a).

Precludes additional credit for HIST 2001 and HIST 2002 (no longer offered).

Lectures/groups three hours a week.

HIST 2204 [0.5 credit]**Early Modern Europe 1350-1650**

A survey of the major social, political and cultural developments in continental Europe from the 14th to the 17th centuries. (Field a).

Precludes additional credit for HIST 2203 (no longer offered).

Lectures/groups three hours a week.

HIST 2206 [0.5 credit]**Early Modern Europe 1600-1800**

A survey of the major social, political and cultural developments in continental Europe during the 17th and 18th centuries. (Field a).

Precludes additional credit for HIST 2203 (no longer offered).

Lectures/groups three hours a week.

HIST 2207 [1.0 credit]**Nineteenth-Century Europe**

A study of critical episodes in the history of continental Europe during the nineteenth century. Themes may include the struggles for democracy in France, modernizing reform in Russia, and national unification in Italy and Germany. (Field b).

Lectures/groups three hours a week.

HIST 2301 [0.5 credit]**Canadian Political History**

An historical survey of political experiences in Canada. (Field c).

Precludes additional credit for HIST 2303 (no longer offered).

Lectures/groups three hours a week.

HIST 2304 [1.0 credit]**Social and Cultural History of Canada**

A thematic exploration of how the spaces of home, work, and play have been historically produced, understood, and experienced in Canada. (Field c).

Lectures/groups three hours a week.

HIST 2308 [0.5 credit]**Colonial Latin America**

From ancient civilizations to the era of Independence, this class follows conquest, colonization and development of national identity in the countries of Latin America. (Field d).

Precludes additional credit for HIST 2307 (no longer offered).

Lectures/groups three hours a week.

HIST 2309 [0.5 credit]**Modern Latin America**

From the Wars of Independence until the end of the twentieth century, this class follows the emergence of Latin American nations, their economies, politics, culture and international relations. (Field d).

Precludes additional credit for HIST 2307 (no longer offered).

Lectures/groups three hours a week.

HIST 2311 [0.5 credit]**Environmental History of Canada**

A survey of Canadian history considering nature, landscape and geography. Topics include the history of energy regimes and climate change; Indigenous ecological knowledge; colonization and settlement; resource extraction; commodity production; environmental policies and movements. (Field c or e).

Precludes additional credit for HIST 2310 (no longer offered).

Lectures/groups three hours a week.

HIST 2312 [0.5 credit]**History of the Indian Ocean World**

The Indian Ocean is one of the oldest maritime highways in the history of humanity and also an epicentre of global economy in the pre-modern world. The aim of the course is to familiarize students with the non-Western antecedents of modern global history. (Field d).

Precludes additional credit for HIST 3716 (no longer offered).

Lectures/groups three hours a week.

HIST 2401 [0.5 credit]**History of the United States to 1865**

A survey of United States politics and society from the American Revolution to the Civil War. (Field c).

Precludes additional credit for HIST 2400 (no longer offered).

Lectures/groups three hours a week.

HIST 2402 [0.5 credit]**History of the United States from 1865**

A survey of United States politics and society from Reconstruction to the era of globalization. (Field c).

Precludes additional credit for HIST 2400 (no longer offered).

Lectures/groups three hours a week.

HIST 2502 [0.5 credit]**Modern Britain**

A survey of significant political and social developments in Britain from the 18th to the late 20th century. (Field b).

Precludes additional credit for HIST 2500 [1.0], no longer offered.

Lectures/groups three hours a week.

HIST 2506 [0.5 credit]**Introduction to Women's and Gender History**

An introductory study of women's and gender history. Themes may include sexuality, masculinity, women's activism, consumer culture, religion, and reproductive rights. Geographic and temporal focus varies from year to year. (Field e).

Precludes additional credit for HIST 2504 (no longer offered).

Lectures/groups three hours a week.

HIST 2508 [0.5 credit]**War, Politics, and Society in Twentieth-Century Global France**

A study of France in global context from the late 19th century to the present. Topics include the First and Second World Wars, colonialism and decolonization, the Algerian War, youth culture and protest, and memory and commemoration. (Field b).

Precludes additional credit for HIST 2505 (no longer offered).

Lectures/groups three hours a week.

HIST 2510 [0.5 credit]**19th-Century Germany**

The social, cultural, and political history and impact of German nationhood. Topics include the rise of social democracy and the feminist movements, alliance and empire building, scientific racism, sexology, and the emancipation and assimilation of German Jews into the body politic. (Field b).

Precludes additional credit for HIST 2509 (no longer offered).

Lectures/groups three hours a week.

HIST 2511 [0.5 credit]**20th-Century Germany**

A survey of social, cultural, and political tensions and developments in Germany from World War One to the Fall of the Berlin Wall. (Field b).

Precludes additional credit for HIST 2509 (no longer offered).

Lectures/groups three hours a week.

HIST 2600 [1.0 credit]**History of Russia**

A survey of Russian history from the rise of Kievan Rus in the 10th century to post-Soviet Russia in the 21st, with emphasis on political systems and the lives of ordinary people. (Field a or b).

Lectures/groups three hours a week.

HIST 2706 [0.5 credit]**Ancient and Pre-Colonial Africa**

Ancient African cultures and civilizations, the trans-Saharan trade system, and the trans-Atlantic and Indian Ocean slave trades from 600 BCE to the 19th century. (Field d).

Precludes additional credit for HIST 2705 (no longer offered).

Lectures/groups three hours a week.

HIST 2707 [0.5 credit]**Modern Africa**

The conquest and colonization of African polities by the European imperial powers from the late 19th century, the 20th century wars of decolonization, and the emergence of independent African nations, including their economies, politics, and culture. (Field d).

Precludes additional credit for HIST 2705 (no longer offered).

Lectures/groups three hours a week.

HIST 2710 [0.5 credit]**Introduction to Caribbean History**

Introduction to the history of the Caribbean that examines the indigenous populations, the role of colonialism and slavery in the construction of plantation societies, the impact of emancipation, and the social, cultural, economic, and political dynamics of the Caribbean in the post-emancipation period. (Field d).

Precludes additional credit for HIST 2704 (no longer offered).

Lectures/groups three hours a week.

HIST 2802 [0.5 credit]**War and Society in Modern Europe, 1789-1914**

A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).

Precludes additional credit for HIST 2801 (no longer offered).

Lectures/groups three hours a week.

HIST 2803 [0.5 credit]**War and Society in Modern Europe, 1914-1950**

A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).

Precludes additional credit for HIST 2801 (no longer offered).

Lectures/groups three hours a week.

HIST 2806 [1.0 credit]**History of Japan**

A survey of Japanese history from the legendary beginning of the country in 660 B.C. to the end of World War Two. (Field a or d).

Lectures/groups three hours a week.

HIST 2809 [0.5 credit]**The Historian's Craft**

Lectures and workshops on historical methods and materials. Topics will include the discovery, evaluation, use and analysis of documents in historical context, non-documentary evidence, statistics, and bibliographical tools. Includes: Experiential Learning Activity

Precludes additional credit for HIST 2808 [1.0 credit], no longer offered.

Prerequisite(s): open only to History majors with at least second-year standing.

Lectures/groups three hours a week.

HIST 2811 [0.5 credit]**Public History from Memory to Museums**

Historical representation in the public arena and public engagement with the past, including archives, museums, films, novels, and video games. This course will involve online work, collaborative projects, and field trips. (Field e).

Includes: Experiential Learning Activity

Lectures three hours a week or online.

HIST 2812 [0.5 credit]**Special Subject in Public History**

A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e).

Lectures three hours a week.

HIST 2902 [0.5 credit]**Origins of the Greeks**

The history of ancient Greece from the Bronze Age through the Archaic period. (Field a).

Also listed as CLCV 2902.

Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2903 [0.5 credit]**Democracy to Alexander**

The history of ancient Greece from the classical period to Alexander. (Field a).

Also listed as CLCV 2903.

Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2904 [0.5 credit]**Rise of the Roman Empire**

The history of ancient Rome from early Rome to the end of the Republic (Field a).

Also listed as CLCV 2904.

Precludes additional credit for CLCV 2901 and HIST 2901 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2905 [0.5 credit]**Rome of the Caesars**

The history of ancient Rome from the end of the Republic to the coming of Islam. (Field a).

Also listed as CLCV 2905.

Precludes additional credit for CLCV 2901, HIST 2901 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2910 [0.5 credit]**Special Subject in History**

A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic).

Lectures/groups three hours a week.

HIST 2912 [0.5 credit]**Science and Technology in History**

Major findings and discussions about the role of science and technology in the past. Topic and time period will vary. (Field a, b, or e).

Precludes additional credit for HIST 2911 (no longer offered).

Lectures/groups three hours a week.

HIST 2913 [0.5 credit]**History of Oil**

Explores the history of oil from the ancient period to the present day. The course uses a transnational approach designed to introduce students to the interconnected histories of oil in countries across the world. (Field e).

Includes: Experiential Learning Activity

Lectures three hours a week.

HIST 3000 [0.5 credit]**Topics in Ancient History**

A study of a selected topic in ancient history. (Field a).

Also listed as CLCV 3000.

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3001 [0.5 credit]**History at the Movies**

Considering opportunities offered by historical feature film in the representation of the past, focusing on how historical themes and subjects have been treated in feature films, cinematic uses of the past, the role of film in shaping public memory and understanding the past. (Field e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3005 [0.5 credit]**Medieval Aristocratic Life**

A general examination of the life of European ruling elites from the ninth to the 13th century, with special reference to the Anglo-Norman and French experiences of noble power, conduct, and prestige. (Field a).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3006 [0.5 credit]**Medieval Religious Life**

A general examination of European religious life from the fourth to the fourteenth centuries, with special reference to the cultural and intellectual worlds of medieval monks, nuns, and clerics. (Field a or e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3007 [0.5 credit]**Medieval Intellectual Life**

A general examination of medieval European intellectual life during the High and Late Middle Ages, with special reference to its setting in the cathedral school and university. (Field a or e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3009 [0.5 credit]**Studies in Greek History**

Study of a period or theme in Greek History. (Field a).

Also listed as CLCV 3201.

Prerequisite(s): CLCV 2902 and CLCV 2903 or HIST 2902 and HIST 2903 or permission of the unit. Permission of the unit is required to repeat this course.

Lectures three hours a week.

HIST 3010 [0.5 credit]**The Later Roman Empire**

The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire. (Field a).

Also listed as CLCV 3010.

Precludes additional credit for HIST 3002 (no longer offered).

Prerequisite(s): a 2000-level Classical Civilization course.

Lecture three hours a week.

HIST 3101 [0.5 credit]**Studies in Roman History**

Study of a period or theme in Roman History. (Field a).

Also listed as CLCV 3202.

Prerequisite(s): CLCV 2904 and CLCV 2905 or HIST 2904 and HIST 2905 or permission of the unit. Permission of the unit is required to repeat this course.

Lectures three hours a week.

HIST 3102 [0.5 credit]**Queer(ing) Archives**

Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives. (Field e).

Also listed as SXST 3106.

Prerequisite(s): third-year standing.

Seminar three hours a week.

HIST 3105 [0.5 credit]**Renaissance Europe**

The political and cultural history of Europe in the fourteenth, fifteenth and sixteenth centuries, with emphasis on the Italian Renaissance and its diffusion into England and France. (Field a).

Precludes additional credit for HIST 2105 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3106 [0.5 credit]**Social History of Sexuality**

Sexuality in Western society, Middle Ages to the present. Themes include attitudes and behaviour; regulation of sexuality; gender; heterosexuality and homosexuality; prostitution; pornography; the politics of sex: stresses continuities and changes and the understanding of sexuality in contexts of place, class, gender, culture. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3109 [0.5 credit]**Social History of Alcohol**

Alcohol in Western society from Ancient times to the present. Production, trade, and consumption of alcohol; religious and social significance; class, gender, and health; drinking cultures; policies toward drunkenness, and alcoholism. Specific topics include comparative trends, temperance movements, and prohibition. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3110 [0.5 credit]**The Cultural History of Food**

Food in its agrarian, economic and cultural context from late antiquity to the nineteenth century; production, distribution, and consumption; health, diet and manners; the religious significance of food; food in art; the rise of the restaurant; the birth of gastronomy. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3111 [0.5 credit]**History of Humanitarian Aid**

History of humanitarian activities and agencies, both governmental and non-governmental, with particular attention to Canadian involvement. The first half is devoted to early humanitarian traditions, the second to specific agencies such as the Red Cross, Oxfam, Christian Aid, Save the Children and UNICEF. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3113 [0.5 credit]**Revolution and Society in France, 1789-1799**

A survey of the French Revolution (1789-99) focusing on attempts to regenerate France and the French through political, economic and cultural reforms. Themes include nationalism, republicanism, violence, legal reform, property redistribution, education, population and family policy, gender, and religion. (Field b).

Precludes additional credit for HIST 3108 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3115 [0.5 credit]**Childhood and Youth in History**

The role of childhood and youth in modern history. Topics may include children's and young people's relationship to work, education, play, sexuality, the welfare state, war, politics, delinquency, leisure, migrations, and popular culture. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3116 [0.5 credit]**History of Disability**

History of disability including the representation and understanding of disability as it changes over time and as it is portrayed and experienced in changing cultural contexts. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history or in Disability Studies.

Lectures three hours a week.

HIST 3120 [0.5 credit]**History of the Body**

The ways in which the human body has been viewed, interpreted, controlled, tended, healed, exercised, measured, pleased, clothed, and reproduced to create representations of social, political, and cultural relationships. Regions and periods will vary. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3205 [0.5 credit]**Canadian Business History**

The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business-government relations). (Field c).

Also listed as BUSI 4608.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3206 [0.5 credit]**Place and Politics in Canadian History**

An exploration of selected topics in the history of one of Canada's regions. Topic varies from year to year. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3209 [0.5 credit]**Canadian Urban History**

Introduction to urban growth and development in Canada. The historical basis of the urban pattern and its influence in Canada and the internal structure and institutions of Canadian cities. Ottawa is used as a case study. (Field c).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3215 [0.5 credit]**Ancient Greek Science**

The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).

Also listed as CLCV 3215.

Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3216 [0.5 credit]**The Scientific Revolution**

The history of astronomy and physics from Copernicus to Newton. (Field b or e).

Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3217 [0.5 credit]**Empire and Globalization**

Varieties of European imperialism from the early modern period to the present. The role of imperialism and anti-imperialism in the development of globalization and European modernity. Comparison of various empires and the transnational linkages between them. (Field b).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3220 [0.5 credit]**Canadian Economic History**

A survey of Canadian economic history from the sixteenth century to the present. (Field c or e).

Also listed as ECON 3220.

Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3203 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

HIST 3230 [0.5 credit]**Selected Topics in Economic History**

An examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year. (Field e).

Also listed as ECON 3230.

Precludes additional credit for ECON 3005 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

HIST 3301 [0.5 credit]**Québec Since 1800**

A social, economic, political, cultural and intellectual history of Québec with emphasis on the development of Québec nationalism. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3304 [0.5 credit]**Canada-United States Relations**

An examination of diplomatic, economic, cultural and military relations, with particular attention to the twentieth century. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3305 [0.5 credit]**Crime and State in History**

The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada. (Field e).

Also listed as LAWS 3305.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3306 [0.5 credit]**Canada's International Policies**

The development of Canadian attitudes and policies toward international affairs, with emphasis on the 20th century. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3310 [0.5 credit]**Animals in History**

A historical survey of relations between humans and other animals. Topics may include history of domestication; hunting; display of animals in zoos, museums and wildlife films; biotechnology; animal welfare movements; companion species; animals as symbols; question of animal agency. (Field c or e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3406 [0.5 credit]**African-American Women**

An examination of aspects of the social, cultural, and political history of African-American women since the eighteenth century. (Field c or e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3410 [0.5 credit]**Popular Culture in the U.S.**

The development of popular culture in the United States. Focusing on a selected theme or time period, the course will examine how popular culture both shaped and reflected broader historical and social developments. Topics may include music, theatre, public entertainments, movies, and television. (Field c).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

HIST 3412 [0.5 credit]**Ideas, Culture, and Society in U.S. History**

The intellectual, social, and cultural production of the United States, focusing on, among other things, a series of creative tensions: tradition versus modernity; rural versus urban; white versus black; masculine versus feminine; homogenous versus cosmopolitan. (Field c).

Precludes additional credit for HIST 3904, Topics in U.S. History (offered in the fall terms of 2009, 2011 and 2012).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3413 [0.5 credit]**The United States and Its Borderlands**

A history of the United States, focusing on the interactions along and across its borders with Mexico, Canada, and the Pacific Rim. This course examines the contests that emerged over colonization, migration, and American state-making. (Field c).

Precludes additional credit for HIST 3904 (offered in winter terms of 2017 and 2014, and fall term of 2014).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3414 [0.5 credit]**The United States in the World**

The history of the US in a global context. Time period will vary, topics could include world revolutions, imperialism and decolonization, immigration, transnational flows of ideas and people, war, peace, urbanization, capitalism, international law, and the environment. (Field c).

Precludes additional credit for HIST 3400 and HIST 3405.

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

HIST 3500 [0.5 credit]**Migration and Diaspora in Canada**

A study of migration and settlement in Canada from the 17th century to the present. (Field c).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3505 [0.5 credit]**Women in Canada**

Selected issues in the history of women in Canada.

Themes include women and war, aboriginal women's history, sexuality, the women's movement, immigration, and motherhood. Attention will be paid to the social construction of gender and the intersections of gender with class, ethnicity, race. (Field c).

Precludes additional credit for HIST 3504 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3507 [0.5 credit]**An Immigrant's Guide to Canada**

A course that critically engages with programs designed to assist the settlement and integration of newcomers to Canada as well as the lived experiences of immigrants and ethnic and diasporic groups in the Canadian context. (Field c).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Seminars three hours a week.

HIST 3510 [0.5 credit]**Indigenous Peoples of Canada**

A survey of indigenous histories in northern North America from earliest times to the present. The course will cover pre-contact histories; military, economic, social, and cultural encounters with newcomers; indigenous experiences with settler colonialism; and the struggle over decolonization. (Field c).

Precludes additional credit for HIST 3503 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3511 [0.5 credit]**Themes in Indigenous History**

Key themes in the history of North America's indigenous peoples. Topics may include land and treaties, religious encounters, the law, cultural identity, and transnational indigenous experiences(Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3515 [0.5 credit]**Madness in Modern Times**

History of madness from the eighteenth century to the present. Themes include changing medical understandings and treatments of mental illness, patients' experiences and accounts of psychiatric institutions and treatments, cultural representations of madness in media, and the history of the asylum. (Field e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3604 [0.5 credit]**Gender and Sexuality in Modern Europe**

Exploration of gender, sexuality, and women's history in Modern Europe. (Field b or e).

Precludes additional credit for HIST 3603 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3704 [0.5 credit]**Aztecs**

An examination of the Aztec social system, culture, religion, and philosophy both before and after the Spanish conquest. (Field a or d).

Prerequisite(s): A 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3708 [0.5 credit]**Reformation Europe**

A history of the Protestant and Catholic Reformations of the sixteenth century, with special emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era. (Field a).

Also listed as RELI 3220.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3710 [0.5 credit]**Themes in Caribbean History**

Key themes in the making of the Caribbean. Topics may include slavery and emancipation, Indian and Chinese migration, colonialism, the independence movement, and race relations. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3712 [0.5 credit]**Mexico: Aztecs to Narcos**

An examination of the social and cultural history of Mexico from indigenous cultures to the problems of the 20th century. Themes include the continuities of indigenous structures, national identity, wars and political violence, and gender. (Field d).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3713 [0.5 credit]**Gender and Sexuality in Latin America**

An exploration of gender and sexualities in Latin America from the pre-conquest period to the end of the twentieth century. (Field d or e).

Precludes additional credit for HIST 3705 and HIST 3707 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3714 [0.5 credit]**The Holocaust: Historical and Religious Dimensions**

Introduction to the historical and religious dimensions of the Holocaust. The foundations, perpetration and consequences of the Nazi Final Solution through primary sources including survivor testimony will be examined. (field b).

Also listed as RELI 3140.

Prerequisite(s): a 2000-level History course or third-year standing and 1.0 credit in History.

Lectures three hours a week.

HIST 3715 [0.5 credit]**Themes in South Asian History**

Key themes in South Asian history. Topics may include the Mughal empire, the British colonial era, the creation and development of states in India, Pakistan, Bangladesh, and Sri Lanka, and various 20th century historical phenomenon. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3717 [0.5 credit]**Gender and Sexuality in Africa**

An exploration of gender and sexualities in Africa from the beginning of colonial rule until the beginning of the 21st century. (Field d or e).

Precludes additional credit for HIST 3711 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3719 [0.5 credit]**South African War, 1899-1902**

Examines causes, major events and consequences of the war. Themes include: the war as part of the Scramble for Africa, emergence of settler nationalism, British "scorched earth policy", establishment of concentration camps, importance of gender, African involvement, international responses, and long-term effects. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3800 [0.5 credit]**International History 1914-21**

A survey of international history from the First World War to the outbreak of the Second World War, focusing on peacemaking, inter-war diplomacy, anti-imperialism, global capitalism, migration, labour, and the origins of the Second World War. (Field b).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3801 [0.5 credit]**International History 1941-90**

A survey of international history from the Second World War to the end of the Cold War that examines the conflict over the reconstruction of the postwar world, including decolonization, emergence of the European Union, and other dimensions of global order and disorder. (Field b).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3805 [0.5 credit]**Twentieth-Century China**

A political history of China from the 1911 Revolution to the present. Emphasis on the development of Chinese communism and the People's Republic since 1949. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3806 [0.5 credit]**Japan Since 1945**

A political, intellectual and economic history of Japan in the twentieth century, concentrating on the period since the end of the Pacific War. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3807 [0.5 credit]**Practicum in History**

An historical research project in a museum or public institution in the Ottawa area conducted under the supervision of the external institution and the History Department. Work includes reading, reports, and meetings. Students should be prepared to devote one day a week to the project.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in a History program, a CGPA of 9.00 or better in history courses, and permission of the Department.

HIST 3809 [0.5 credit]**Historical Representations**

An examination of how historical narratives have been produced in relation to sites of public memory. The public presentation of history through a wide range of themes, which may include museum exhibits, commemorations and popular culture. (Field e).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3810 [0.5 credit]**Historical Theory**

An examination of a wide range of theoretical approaches to history, and a critical reflection on history as a discipline.

Prerequisite(s): HIST 2809 or permission of the Department.

Lectures two hours a week and one hour discussion group.

HIST 3812 [0.5 credit]**Digital History**

The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).

Includes: Experiential Learning Activity

Also listed as DIGH 3812.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3813 [0.5 credit]**Problems in Global and Transnational Histories**

Historical encounters across geographical regions and ways in which historians studied them. Categories of "national," "international," "transnational," "world," and "global" history will be evaluated. Themes include: imperialism, postcolonialism, the environment, migration, trade, religion, the body, war, culture, disease. (Field d or e).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history including at least 0.5 credit in Field d courses (Asia, Africa, the Caribbean, and Latin America).

Lectures three hours a week.

HIST 3814 [0.5 credit]**Crafting Digital History**

This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).

Includes: Experiential Learning Activity

Also listed as DIGH 3814.

Precludes additional credit for HIST 3907 Section "B" offered in winter 2015 and HIST 3907 Section "O" offered in winter 2016.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

HIST 3815 [0.5 credit]**Group Practicum**

A class-based group historical research project done in collaboration with an external institution under the supervision of the institution and the Department. Work includes readings, reports, and meetings. Students should be prepared to devote one full day per week to the project. (Field e).

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in a History program and permission of the Department.

HIST 3820 [0.5 credit]**Explorations in Historical Theory**

Taking a specific historical topic as its focus, this course examines how historians have applied a wide range of theoretical approaches in order to understand and interpret that topic's historical significance. Topics will vary.

Prerequisite(s): HIST 2809, or permission of the unit.

Lectures two hours a week and one hour discussion group.

HIST 3902 [0.5 credit]**Topics in European History**

A lecture course on a special topic in European history. Topic varies from year to year. (Field will depend on topic.).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3903 [0.5 credit]**Topics in Canadian History**

A lecture course on a special topic in Canadian history. Topic varies from year to year. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3904 [0.5 credit]**Topics in U.S. History**

A lecture course on a special topic in United States history. Topic varies from year to year. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3905 [0.5 credit]**Topics in International History**

A lecture course on a special topic in international political or economic history. Topic varies from year to year. (Field b).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3906 [0.5 credit]**Topics in World History**

A lecture course on a special topic in African, Asian, Caribbean, or Latin American history. Topic varies from year to year. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3907 [0.5 credit]**Transnational Topic**

A lecture course on a special topic that takes a transnational approach to history. Course content will vary from year to year. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3908 [0.5 credit]**Thematic Topic**

A lecture course on a special topic that takes a thematic approach to history. Course content will vary from year to year. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3909 [0.5 credit]**Topic in Public History**

A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

HIST 4006 [1.0 credit]**Seminar in Medieval History**

An examination of a selected problem in the history of medieval Europe.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4007 [0.5 credit]**Medieval History**

Selected topic in Medieval History. The topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4100 [1.0 credit]**Seminar in Early Modern European History**

A study of a selected problem in the history of Europe during the early modern period.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4101 [0.5 credit]**Early Modern European History**

Selected topic in the history of Europe during the early modern period. The topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4200 [1.0 credit]**Seminar in European History**

Examination of a selected problem or period in the history of Continental Europe.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4201 [0.5 credit]**Modern European History**

Selected topic in the history of Europe. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4210 [0.5 credit]**Topics in Ancient History**

Intended for Honours students in History and Classics who should normally be in their third- or fourth-year.

Also listed as CLCV 4210.

Precludes additional credit for CLCV 4209, HIST 4209 (no longer offered).

Prerequisite(s): CLCV 2902 (HIST 2902) and CLCV 2903 (HIST 2903) or CLCV 2904 (HIST 2904) and CLCV 2905 (HIST 2905) or CLCV 3201 (HIST 3009) or CLCV 3202 (HIST 3101) or permission of the Department.

Seminar three hours a week.

HIST 4302 [1.0 credit]**Canada: Ideas & Culture**

A seminar on ideas, culture, and society in Canada.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4303 [0.5 credit]**Society and Culture in Canada**

A 0.5 credit seminar course that examines a selected topic on ideas, culture, and society in Canada. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History, or permission of the Department.

Seminar three hours a week.

HIST 4304 [1.0 credit]**Canada: Politics & Society**

A seminar on politics and society in Canada.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4305 [0.5 credit]**Political History in Canada**

A 0.5 credit seminar course that examines a selected topic on politics and society in Canada. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4400 [1.0 credit]**Seminar in U.S. History**

An examination of a selected problem or period in the history of the United States.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4401 [0.5 credit]**United States History**

A 0.5 credit seminar course that examines a selected topic in the history of the United States. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4500 [1.0 credit]**Seminar in British History**

An explanation of a selected problem or period in the history of Great Britain.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4501 [0.5 credit]**British History**

An explanation of a selected problem or period in the history of Great Britain.

Includes: Experiential Learning Activity

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4505 [1.0 credit]**Seminar in Women's and Gender History**

A seminar on the history of women and gender. The particular approach, themes, and historical period will be specified each year.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4506 [0.5 credit]**Gender, Sexuality and Women's History**

A 0.5 credit seminar course that examines a selected topic on the history of women and gender. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4600 [1.0 credit]**Seminar in Russian History**

An examination of a selected problem or period in the history of Imperial or post-Imperial Russia.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4604 [0.5 credit]**Central Europe, Past and Present**

Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood. Particular emphasis will be placed on national accommodations and conflicts.

Also listed as EURR 4204.

Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4605 [0.5 credit]**The Balkans in Transition – 1918 to 1989**

The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes.

Also listed as EURR 4101.

Prerequisite(s): fourth-year standing and one of PSCI 3704, PSCI 3208, PSCI 3209, HIST 2600; or permission of the Department.

Seminar three hours a week.

HIST 4606 [0.5 credit]**Contemporary Europe: From Postwar to the European Union**

History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions.

Includes: Experiential Learning Activity

Also listed as EURR 4303.

Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.

Seminars three hours a week.

HIST 4607 [0.5 credit]**Imperial Russia and the Russian Revolution**

Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life.

Includes: Experiential Learning Activity

Also listed as EURR 4305.

Also offered at the graduate level, with different requirements, as HIST 5607, for which additional credit is precluded.

Seminar three hours a week.

HIST 4608 [0.5 credit]**The Soviet Union**

Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR's citizens.

Includes: Experiential Learning Activity

Also listed as EURR 4306.

Also offered at the graduate level, with different requirements, as HIST 5608, for which additional credit is precluded.

Seminar three hours a week.

HIST 4700 [1.0 credit]**Seminar in World History**

An examination of a selected problem or period in the history of Asia, Africa, the Caribbean or Latin America.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4701 [0.5 credit]**African History**

A 0.5 credit seminar course that examines a selected topic in the history of Africa. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4702 [0.5 credit]**South Asian History**

A 0.5 credit seminar course that examines a selected topic in the history of South Asia. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4703 [0.5 credit]**The Global South**

A 0.5 credit seminar course that examines a selected topic in the history of the Global South. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4704 [0.5 credit]**Caribbean and Latin American History**

A 0.5 credit seminar course that examines a selected topic in Caribbean and Latin American history. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4705 [0.5 credit]**Asian History**

A 0.5 credit seminar course that examines a selected topic in the history of Asia. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4802 [1.0 credit]**Seminar in International History**

An examination of a selected problem or period in the history of international relations.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4805 [1.0 credit]**Seminar on a Transnational or Thematic Topic**

A seminar on a transnational or thematic topic. The particular topic will be specified each year.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4806 [0.5 credit]**Global, Transnational, or Thematic History**

Selected topic in global and transnational history or on a thematic topic in history. The topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4910 [1.0 credit]**Honours Research Project**

The project will be a substantial piece of original research conducted under the supervision of a faculty member in History. The medium of presentation will be agreed upon between student and supervisor, and may include a research paper, a documentary film, or a web-based project.

Includes: Experiential Learning Activity

Precludes additional credit for HIST 4908, HIST 4909 (no longer offered).

Prerequisite(s): fourth-year standing in History Honours program, a minimum GPA of 9.0 (B+) in the History major, and permission of the department, or in exceptional circumstances with permission of the department only.

HIST 4915 [0.5 credit]**Topics in History**

Intended for Honours students in History. Topics will vary from year to year.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4916 [0.5 credit]**Topic in Public History**

Topics will vary from year to year.

Prerequisite(s): HIST 2811 and fourth-year standing in Honours History, or permission of the Department.

Seminar three hours a week.

HIST 4920 [1.0 credit]**Seminar in Public History**

Topics will vary from year to year.

Prerequisite(s): HIST 2811 and fourth-year standing in Honours History, or permission of the Department.

Seminar three hours a week.

History and Theory of Architecture

This section presents the requirements for programs in:

- History and Theory of Architecture B.A. Honours
- History and Theory of Architecture B.A. Combined Honours
- History and Theory of Architecture B.A.
- Minor in History and Theory of Architecture
- Post-Baccalaureate Diploma in History and Theory of Architecture

Program Requirements**History and Theory of Architecture****B.A. Honours (20.0 credits)****A. Credits Included in the Major CGPA (10.0 credits)****1. 3.0 credits in:** 3.0

ARTH 1101 [0.0] Art and Society: Renaissance to the Present

ARTH 1200 [0.0] History and Theory of Architecture: Prehistory to 1500

ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present

ARTH 2710 [0.5] Experiencing Architecture

ARTH 3100 [0.5] History and Methods of Art and Architectural History

ARTH 3107 [0.5] History and Methods of Architectural History

2. 2.0 credits from: 2.0

ARTH 2102 [0.5] Greek Art and Archaeology

ARTH 2105 [0.5] Roman Art and Archaeology

ARTH 2107 [0.5] Islamic Architecture and Art

ARTH 2202 [0.5] Medieval Architecture and Art

ARTH 2310 [0.5] Architecture of the Early Modern World [1400-1750]

ARTH 2510 [0.5] Architecture of the 18th and 19th Centuries

ARTH 2610 [0.0] Twentieth-Century Architecture

3. 1.0 credit from: 1.0

ARTH 3002/
ARCH 4002 [0.5] Canadian Architecture

ARTH 3003 [0.5] Architecture and Representation

ARTH 3005 [0.5] American Architecture

ARTH 3701 [0.5] Art and Architecture on Site

ARTH 3710 [0.5] Architecture and Empire

ARTH 3810 [0.5] A Closer Look at the Designed Environment

4. 1.0 credits in ARTH or ARCH at the 2000-level or higher 1.0

5. 0.5 credit from: 0.5

ARTH 4107 [0.5] Topics in Islamic Architecture and Art

ARTH 4202 [0.5] Topics in Medieval Architecture and Art

ARTH 4610 [0.5] Topics in Modern Architecture or Design

ARTH 4800 [0.5] Topics in Architectural History

6. 1.5 credits in ARTH or ARCH at the 4000-level 1.5

7. 1.0 credit from: 1.0

ARCH 4200 [0.5] Architectural Conservation Philosophy and Ethics

ARCN 4100 [0.5] Historic Site Recording and Assessment

CDNS 2400 [0.5] Heritage Places and Practices in Canada

CDNS 4400 [0.5] Space, Landscape and Identity in Canada

GEOG 1020 [0.5] People, Places and Environments

GEOG 2300 [0.5] Space, Place and Culture

GEOG 3021 [0.5] Geographies of Culture and Identity
HIST at the 1000-level or higher

IDES 1000 [0.5] Theory and History of Design

B. Credits Not Included in the Major CGPA (10.0 credits)

8. 8.0 credits in electives not in ARTH or Architecture 8.0

9. 2.0 credits in free electives. 2.0

Total Credits 20.0

Notes for programs in History and Theory of Architecture:

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

History and Theory of Architecture**B.A. Combined Honours (20.0 credits)****A. Credits included in the major CGPA (6.5 Credits)****1. 2.5 credits in:** 2.5

ARTH 1200 [0.0] History and Theory of Architecture: Prehistory to 1500

ARTH 1201 [0.0] History and Theory of Architecture: 1500 to Present

ARTH 2710 [0.5] Experiencing Architecture

ARTH 3100 [0.5] History and Methods of Art and Architectural History

ARTH 3107 [0.5] History and Methods of Architectural History

2. 1.5 credits from: 1.5

ARTH 2102 [0.5] Greek Art and Archaeology

ARTH 2105 [0.5] Roman Art and Archaeology

ARTH 2107 [0.5] Islamic Architecture and Art

ARTH 2202 [0.5]	Medieval Architecture and Art	
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	
ARTH 2610 [0.0]	Twentieth-Century Architecture	
3. 1.0 credit from:		1.0
ARTH 3002/ ARCH 4002 [0.5]	Canadian Architecture	
ARTH 3003 [0.5]	Architecture and Representation	
ARTH 3005 [0.5]	American Architecture	
ARTH 3701 [0.5]	Art and Architecture on Site	
ARTH 3710 [0.5]	Architecture and Empire	
ARTH 3810 [0.5]	A Closer Look at the Designed Environment	
4. 0.5 credit from:		0.5
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art	
ARTH 4202 [0.5]	Topics in Medieval Architecture and Art	
ARTH 4610 [0.5]	Topics in Modern Architecture or Design	
ARTH 4800 [0.5]	Topics in Architectural History	
5. 1.0 credits in ARTH or ARCH or ARCN at the 4000-level		1.0
B. Additional Requirements (13.5)		13.5
6. The requirements of the other discipline must be satisfied		
7. Sufficient free electives to make 20.0 credits in total for the program		
Total Credits		20.0

History and Theory of Architecture B.A. (15.0 credits)

A. Credits Included in the Major CGPA

1. 2.5 credits in:		2.5
ARTH 1101 [0.0]	Art and Society: Renaissance to the Present	
ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present	
ARTH 2710 [0.5]	Experiencing Architecture	
ARTH 3100 [0.5]	History and Methods of Art and Architectural History	
2. 1.5 credits from:		1.5
ARTH 2102 [0.5]	Greek Art and Archaeology	
ARTH 2105 [0.5]	Roman Art and Archaeology	
ARTH 2107 [0.5]	Islamic Architecture and Art	
ARTH 2202 [0.5]	Medieval Architecture and Art	
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	
ARTH 2610 [0.0]	Twentieth-Century Architecture	
3. 1.0 credit from:		1.0
ARTH 3002/ ARCH 4002 [0.5]	Canadian Architecture	
ARTH 3003 [0.5]	Architecture and Representation	
ARTH 3005 [0.5]	American Architecture	

ARTH 3107 [0.5]	History and Methods of Architectural History	
ARTH 3701 [0.5]	Art and Architecture on Site	
ARTH 3710 [0.5]	Architecture and Empire	
ARTH 3810 [0.5]	A Closer Look at the Designed Environment	
4. 0.5 credit in ARTH or ARCH at the 2000-level or higher		0.5
5. 1.5 credits in ARTH or ARCH at the 3000-level		1.5
B. Credits Not Included in the Major CGPA		
6. 6.0 credits in electives not in ARTH or Architecture		6.0
7. 2.0 credit in free electives.		2.0
Total Credits		15.0

Notes for programs in History and Theory of Architecture:

- No more than 1.5 credits may be taken as directed readings and/or the Honours Research essay.
- Architecture courses which are workshops or studio-based may not be taken for credit in these programs.
- Architecture courses taken to fulfill the requirements of these programs are not transferable to other programs in the Faculty of Arts and Social Sciences.

Minor in History and Theory of Architecture (4.0 credits)

Open to all undergraduate degree students not in History and Theory of Architecture programs.

Requirements

1. 1.0 credit in:		1.0
ARTH 1200 [0.0]	History and Theory of Architecture: Prehistory to 1500	
ARTH 1201 [0.0]	History and Theory of Architecture: 1500 to Present	
2. 1.5 credits from:		1.5
ARTH 2102 [0.5]	Greek Art and Archaeology	
ARTH 2105 [0.5]	Roman Art and Archaeology	
ARTH 2107 [0.5]	Islamic Architecture and Art	
ARTH 2202 [0.5]	Medieval Architecture and Art	
ARTH 2310 [0.5]	Architecture of the Early Modern World [1400-1750]	
ARTH 2510 [0.5]	Architecture of the 18th and 19th Centuries	
ARTH 2610 [0.0]	Twentieth-Century Architecture	
3. 1.5 credits from:		1.5
ARTH 3002/ ARCH 4002 [0.5]	Canadian Architecture	
ARTH 3005 [0.5]	American Architecture	
ARTH 3100 [0.5]	History and Methods of Art and Architectural History	
ARTH 3710 [0.5]	Architecture and Empire	
ARTH 3810 [0.5]	A Closer Look at the Designed Environment	
ARTH 4107 [0.5]	Topics in Islamic Architecture and Art	
ARTH 4202 [0.5]	Topics in Medieval Architecture and Art	
ARTH 4610 [0.5]	Topics in Modern Architecture or Design	

ARTH 4800 [0.5] Topics in Architectural History

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Post-Baccalaureate Diploma in History and Theory of Architecture (4.0 credits)

Admission to this program requires the permission of the History and Theory of Architecture program. Normally, students would be required to have completed an undergraduate degree with a minimum B average or higher to be admitted. Applications will be reviewed on a case-by-case basis.

Requirements:

1. 1.0 credit in:		1.0
ARTH 3100 [0.5]	History and Methods of Art and Architectural History	
ARTH 3107 [0.5]	History and Methods of Architectural History	
2. 2.0 credit in ARTH at the 2000-level or above (excluding ARTH 2710)		2.0
3. 1.0 credit in ARTH at the 4000-level		1.0
Total Credits		4.0

With the approval of the History and Theory of Architecture undergraduate supervisor, 0.5 credit may be taken outside the department.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTN, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public

Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Regulations

Post-Baccalaureate Diploma

In addition to the requirements presented here, students must satisfy the University regulations (see the Academic Regulations of the University section of this Calendar).

Definition

A post-baccalaureate diploma is defined as a stand-alone undergraduate credential intended to:

- qualify a candidate for consideration for entry into a master's program, or
- bring a candidate who already possesses a bachelor's degree up to a level of a bachelor's degree of 20.0 credits or more in another discipline, or
- provide a candidate who already possesses a twenty-credit bachelor's degree in the same discipline the opportunity to bring their previous studies to current equivalents and/or to examine alternative areas, or
- provide a candidate with a professional undergraduate credential for which the prior completion of an undergraduate degree program is appropriate.

Program Requirements

- A post-baccalaureate diploma is normally constituted of a minimum of 3.0 credits to a maximum of 5.0 credits of advanced undergraduate courses.
- A minimum of 3.0 residency credits counting toward the post-baccalaureate diploma.

English as a Second Language Requirement

In addition to the program requirements, completion of English as a Second Language (ESLA) courses may be required from the following sequence: ESLA 1300, ESLA 1500, ESLA 1900, ESLA 1905. No credits from this sequence will be counted toward the post-baccalaureate diploma.

Continuation

All post-baccalaureate diploma students are expected to complete their diploma requirements within two calendar years after the date of initial registration. After this period student may be withdrawn.

Graduation

- A candidate for a post-baccalaureate diploma must have an overall CGPA of at least 6.5 to graduate.
- A candidate for a post-baccalaureate diploma must obtain a grade of C- or higher in each course taken in fulfillment of the program requirements.
- Students should consult with the Department, School or Institute when planning their diploma and selecting courses.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Art and Architectural History (ARTH) Courses

ARTH 1100 [0.5 credit]

Art and Society: Prehistory to the Renaissance

A survey of art, architecture and artifacts from prehistory to the Renaissance. Ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1101 [0.5 credit]

Art and Society: Renaissance to the Present

A survey of art, architecture and related visual forms in their expanding contexts from the Renaissance to the present. Ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1105 [0.5 credit]

Art as Visual Communication

A variety of visual material is organized topically to examine the elements of art (line, shape, value, colour, texture, space), the principles of pictorial organization, the materials and techniques of art, and recurrent tendencies in artistic styles and outlooks.

Lectures three hours a week.

ARTH 1200 [0.5 credit]

History and Theory of Architecture: Prehistory to 1500

An introduction to the history of architecture from prehistory to ca. 1500, considering technological, formal, intellectual and social developments that informed the built environment through a range of building types.

Lectures two hours a week, tutorial one hour a week.

ARTH 1201 [0.5 credit]

History and Theory of Architecture: 1500 to Present

An introduction to the history of architecture from ca. 1500 to the present, considering technological, formal, intellectual, and social developments that informed the built environment through a range of building types.

Precludes additional credit for ARTH 2608 (no longer offered).

Lectures two hours a week, tutorial one hour a week.

ARTH 2002 [0.5 credit]

Historical Art in Canada

A survey of historical art in Canada, from the seventeenth century to the early twentieth century. Topics may include craftwork, amateur and professional artists, art institutions, gender, nationalism, regionalism and ethnicity. Coverage will include artworks in local and national collections in the National Capital region.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2003 [0.5 credit]

Canadian Twentieth-Century and Contemporary Art

A survey of twentieth-century and contemporary Canadian art in a variety of media within social, political and cultural contexts. Regionalism, multiculturalism, nationalism, gender, race and identity will be considered in relation to local and national collections in Ottawa.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2005 [0.5 credit]

Arts of the First Peoples: The Woodlands, the Plains and the Subarctic

Introduction to the visual arts of Indigenous peoples of the eastern and central regions of North America. A post-colonial perspective will be used to consider selected examples of creative production from time immemorial to the present.

Prerequisite(s): second-year standing or permission of the discipline.

Lectures three hours a week.

ARTH 2006 [0.5 credit]

Arts of the First Peoples: The Southwest, the West Coast and the Arctic

Introduction to the visual arts of Indigenous peoples of the western and northern regions of North America. A post-colonial perspective will be used to consider selected examples of visual materials from time immemorial to the present.

Prerequisite(s): second-year standing or permission of the discipline.

Lectures three hours a week.

ARTH 2007 [0.5 credit]

Asian Art

Surveys Asian art from second-century China to post-war Japan. Representational strategies of court artists and artists from the capital are compared with artists on the periphery. Articulation of power in tombs, palaces and war propaganda is examined, as is the individual and the eccentric.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2008 [0.5 credit]

Inuit Art

Survey of visual art produced by Canadian Inuit from the circumpolar area.

Precludes additional credit for ARTH 3104.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2009 [0.5 credit]**Art Live: Art History Workshop**

Examination of techniques, materials and institutions of art history; lectures and workshops on art historical research and writing, the materials of art, professional skills; site visits to art institutions.

Includes: Experiential Learning Activity

Prerequisite(s): ARTH 1100 and ARTH 1101, or permission of the discipline. Restricted to students enrolled in the Art History B.A. or B.A. Honours.

Lecture three hours a week.

ARTH 2102 [0.5 credit]**Greek Art and Archaeology**

The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as CLCV 2303.

Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2105 [0.5 credit]**Roman Art and Archaeology**

The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as CLCV 2304.

Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2106 [0.5 credit]**Chinese Art and Visual Culture**

A survey of Chinese art from the pre-modern era to re-inventions of traditions in modern and contemporary art. Artworks in various media (ink painting, calligraphy, Buddhist sculpture, ceramics, lacquer and garden architecture) will be studied in their historical, cultural and socio-political contexts.

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2107 [0.5 credit]**Islamic Architecture and Art**

Survey of artistic movements in Islamic art and architecture in the Mediterranean, the Near East, and Central and South Asia, from the seventh century to ca. 1450. Commonalities and differences between major dynastic visual cultures will be explored.

Prerequisite(s): second-year standing or permission of the Discipline.

Lecture three hours a week.

ARTH 2108 [0.5 credit]**Art Worlds**

Survey of an area of global art history. Topics may vary from year to year, and will be posted on the School for Studies in Art and Culture website.

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2202 [0.5 credit]**Medieval Architecture and Art**

A survey of architecture and art in Europe from ca. 313-1500 C.E. Sacred, secular, and domestic works will be discussed with reference to cultural meaning, social function, structure, and form.

Precludes additional credit for ARTH 2200 and ARTH 2201.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2300 [0.5 credit]**Italian Renaissance Art**

An examination of major works of art and architecture, issues and themes in the Italian Renaissance; emphasis on the fifteenth and sixteenth centuries, with a look at roots in the fourteenth.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2310 [0.5 credit]**Architecture of the Early Modern World [1400-1750]**

An examination of architecture from the late medieval period to the 18th century with particular attention paid to architecture and design cultures within the European and Islamic worlds and their cross-cultural interactions.

Precludes additional credit for ARTH 3305 (no longer offered).

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2404 [0.5 credit]**Art of the 17th and 18th Centuries**

Tracing developments in 17th- and 18th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and society.

Precludes additional credit for ARTH 2403 (no longer offered), ARTH 2405 (no longer offered) and ARTH 2406 (no longer offered).

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2502 [0.5 credit]**Art of the 19th Century**

Tracing developments in 19th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and modernity.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2510 [0.5 credit]**Architecture of the 18th and 19th Centuries**

A survey of key monuments, theories, forms and technological developments of eighteenth- and nineteenth-century architecture.

Precludes additional credit for ARTH 3809 Section "B" taken in 2014.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2600 [0.5 credit]**Modern European Art 1900-1945**

Major artistic movements in Europe from about 1900 to 1945.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2601 [0.5 credit]**History and Theory of Photography**

Issues, themes, movements in photography and individual photographers from the origins of the medium to the present.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2610 [0.5 credit]**Twentieth-Century Architecture**

Developments in architectural form and culture through the course of the twentieth century, with emphasis on the formation and subsequent critique of the Modern Movement.

Precludes additional credit for ARTH 3609 and ARCH 3009.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2710 [0.5 credit]**Experiencing Architecture**

Development of critical thinking, writing, and looking skills in connection to architecture, through a combination of site visits, workshops and classroom exercises.

Includes: Experiential Learning Activity

Prerequisite(s): ARTH 1200 and ARTH 1201 or permission of the discipline. Restricted to students in the History and Theory of Architecture B.A. or B.A. Honours program.

Lecture three hours a week.

ARTH 2807 [0.5 credit]**Philosophy of Art**

Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences.

Also listed as PHIL 2807.

Lectures three hours a week.

ARTH 3000 [0.5 credit]**Themes in Canadian Art**

Selected aspects of Canadian art in a variety of media. Students will be exposed to works in the National Capital region.

Prerequisite(s): ARTH 2002 or ARTH 2003 or (for a photography topic) ARTH 2601 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3002 [0.5 credit]**Canadian Architecture**

Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques.

Includes: Experiential Learning Activity

Also listed as ARCH 4002.

Prerequisite(s): ARTH 1100 and ARTH 1101, or ARTH 1200 and ARTH 1201, or ARCH 1002 and ARCH 1201, and second-year standing or higher, or permission of the Discipline.

ARTH 3003 [0.5 credit]**Architecture and Representation**

Examination of the intersections between architecture, representations, and cultures.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing, or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3005 [0.5 credit]**American Architecture**

The cultural history of the United States as expressed through its architectural heritage. Selected buildings and complexes from the earliest settlements through the early twentieth century are examined.

Prerequisite(s): ARTH 1201 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3007 [0.5 credit]**Modern Asian Art**

Modern and contemporary art in East Asia, beginning in Japan with the 1868 Meiji revolution and the 1911 revolution in China.

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

ARTH 3008 [0.5 credit]**Contemporary Chinese Art and Art History**

Modern and contemporary art in China and beyond from the reform period in 1979 until today. Artworks will be examined in terms of their (art-)historical, discursive, socio-political, infrastructural and transcultural conditions of production and reception.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 3100 [0.5 credit]**History and Methods of Art and Architectural History**

The study of the history of art and architectural history and the methodologies and research tools employed.

Precludes additional credit for ARTH 3106 (no longer offered).

Prerequisite(s): third-year or higher standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 3102 [0.5 credit]**Studies in Greek Art**

A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year. This course is repeatable for credit when the topic changes.

Also listed as CLCV 3306, RELI 3732.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

ARTH 3105 [0.5 credit]**Studies in Roman Art**

A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.

Also listed as CLCV 3307, RELI 3733.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

ARTH 3107 [0.5 credit]**History and Methods of Architectural History**

The study of the methodologies and research approaches employed by architectural historians.

Prerequisite(s): ARTH 3100 and third-year standing or higher in History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 3108 [0.5 credit]**History and Methods of Art History**

The study of current methodologies and research tools employed by art historians.

Precludes additional credit for ARTH 3106 (no longer offered).

Prerequisite(s): ARTH 3100 and third-year standing or higher in Art History, or permission of the Discipline.

Seminar three hours a week.

ARTH 3400 [0.5 credit]**History of Printmaking**

Exploration of printmaking techniques from the 16th century to the present focusing on the work of famous and lesser-known printmakers. Topics may include: printmaking genres (from fine art prints to caricature), originality versus reproduction, book illustration, the art market, posters and propaganda.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3507 [0.5 credit]**The Artist in Context**

An examination of one artist's or group of artists' life and work. Relevant artistic, intellectual, social, political and theoretical contexts are considered.

Prerequisite(s): ARTH 1101 or ARTH 2502 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3600 [0.5 credit]**Art Since 1945**

Contemporary art in the global context from 1945 to the present, including Abstract Expressionism, Pop Art, Postmodernism, object art, performance art and installations.

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

Lecture three hours a week.

ARTH 3701 [0.5 credit]**Art and Architecture on Site**

The study of art and/or architecture on site outside the National Capital Region, in Canada or internationally.

May include a combination of study in Ottawa and on site. Locations vary. Students are expected to bear all travel and other costs arising from site visits.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Discipline. Applicants will normally have third-year standing with a minimum of 1.0 credit in Art History or History and Theory of Architecture and a GPA of 8.0 or above.

Hours to be arranged. Locations will vary.

ARTH 3705 [0.5 credit]**Selected Museum Exhibition**

This seminar complements a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or higher or permission of the Discipline.

Seminar and/or lectures three hours a week.

ARTH 3710 [0.5 credit]**Architecture and Empire**

The impact of imperial power and aspiration on the built environment, from the Ancient world to the present day, taking 'empire' in its broadest political, social and economic sense.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.

Seminar and/or lectures three hours a week.

ARTH 3809 [0.5 credit]**A Closer Look at Art and Visual Culture**

Selected aspects of art history and visual culture from ancient times to the present.

Prerequisite(s): third-year standing or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3810 [0.5 credit]**A Closer Look at the Designed Environment**

Selected aspects of the history of the designed environment, from ancient times to the present.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3900 [0.5 credit]**Practicum in Art and Architectural History**

Practical experience gained by working on specific projects under the supervision of the staff of a museum, cultural institution, public- or private-sector organization associated with art, architecture, design, or heritage. A maximum of 1.0 credit in practicum courses may be used to fulfill program requirements.

Includes: Experiential Learning Activity

Prerequisite(s): B.A. or B.A. (Honours) in Art History or History and Theory of Architecture with third-year standing or higher and a CGPA of 9.00 or better in ARTH courses, and permission of the Discipline.

ARTH 4000 [0.5 credit]**Topics in Art in Canada**

Selected topics in art in Canada. Students will be exposed to works in local and national collections in the National Capital region.

Prerequisite(s): one of ARTH 2002, ARTH 2003, ARTH 3000 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminars three hours a week.

ARTH 4002 [0.5 credit]**Topics in Architecture in Canada**

Selected aspects of the designed environment in Canada.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the discipline.

ARTH 4003 [0.5 credit]**Topics in Contemporary Chinese Art**

Critical examination of contemporary Chinese art. Topics include socially engaged art, historiographies of Chinese contemporary art, re-inventions of traditions, gender and politics of the body, exhibition histories and infrastructures of contemporary art in China.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4005 [0.5 credit]**Topics in Contemporary Indigenous Art**

This course will use critical theory to examine aspects of contemporary visual art created by the Inuit and First Peoples in North America.

Prerequisite(s): ARTH 2005 or ARTH 2006 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4007 [0.5 credit]**Topics in Asian Art**

A selected topic in East Asian Art, which may include 19th century Ukiyo-e woodblock prints, The Gutai Group, performance art in China and Japan, and contemporary Chinese art.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4008 [0.5 credit]**Transnational Theory**

Critical examination of transnational theories of cultural analysis, including Orientalism, Post-Colonial theory, translation theory and theories of cultural hybridity.

Precludes additional credit for ARTH 3103.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4107 [0.5 credit]**Topics in Islamic Architecture and Art**

Selected aspects of Islamic Architecture and Art.

Prerequisite(s): ARTH 2107 or ARTH 2310 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4202 [0.5 credit]**Topics in Medieval Architecture and Art**

Selected aspects of Medieval or Medievalist Architecture and Art.

Prerequisite(s): ARTH 2202 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4305 [0.5 credit]**Topics in Renaissance Art**

Selected aspects of Renaissance art and society.
Prerequisite(s): ARTH 2300 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4402 [0.5 credit]**Topics in Art of the 18th and 19th Centuries**

Selected aspects of 18th-century and/or 19th-century art. Precludes additional credit for ARTH 4406 (no longer offered), ARTH 4505 (no longer offered).
Prerequisite(s): ARTH 2404 or ARTH 2405 or ARTH 2406 or ARTH 2502 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4600 [0.5 credit]**Art, Architecture, and Gender**

Art and/or architectural creation, reception and/or historiography through the lens of gender identities.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4602 [0.5 credit]**Issues in the Theory and History of Photography**

Relates the themes of selected theoretical texts on photography to specific examples of photographic practice.
Prerequisite(s): ARTH 2601 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4610 [0.5 credit]**Topics in Modern Architecture or Design**

Selected topics in architecture and design of the Modern era.
Prerequisite(s): ARTH 2610 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4701 [0.5 credit]**Art and Architecture on Site**

Intensive study of art and/or architecture on site outside the National Capital region, in Canada or internationally. May include a combination of study in Ottawa and on site. Students are expected to bear all travel and other costs arising from site visits.
Includes: Experiential Learning Activity
Prerequisite(s): Permission of the Discipline. Applicants will normally have fourth-year standing in Art History or History and Theory of Architecture and a CGPA of 8.0 or above.
Hours to be arranged. Locations vary.

ARTH 4705 [0.5 credit]**Seminar: Selected Museum Exhibition**

Studies a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.
Includes: Experiential Learning Activity
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.
Lectures and/or seminar three hours a week.

ARTH 4800 [0.5 credit]**Topics in Architectural History**

Selected aspects of architectural history from ancient times to the present.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4809 [0.5 credit]**Topics in Art History and Criticism**

Selected aspects of art history and/or criticism from ancient times to the present.
Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.
Seminar three hours a week.

ARTH 4900 [0.5 credit]**Directed Readings and Research**

Supervised readings and research projects. Guidelines must be obtained from the Undergraduate Supervisor prior to registration. A written project outline, approved by the supervising Art History or History and Theory of Architecture faculty member, must be submitted by the last day for course changes.
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.

ARTH 4909 [1.0 credit]**Honours Research Essay**

An essay of approximately 10,000 words, resulting from independent research, supervised by Art History or History and Theory of Architecture faculty.
Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture with a minimum CGPA of 9.00 and permission of the Discipline.

Human Rights and Social Justice

This section presents the requirements for programs in:

- Human Rights and Social Justice B.A. Honours
- Human Rights and Social Justice B.A. Combined Honours
- Human Rights and Law with Concentration in Transnational Law and Human Rights B.A. Combined Honours

- Human Rights and Social Justice B.A.
- Minor in Human Rights and Social Justice

Program Requirements

Human Rights and Social Justice

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit from:		1.0
HUMR 1001 [1.0]	Introduction to Human Rights	
FYSM 1104 [1.0]	Human Rights: Issues and Investigations	
FYSM 1502 [1.0]	Selected Topics in Legal Studies (specifically the section on Global Governance and Human Rights)	
or approved FYSM		
2. 0.5 credit in:		0.5
HUMR 2001 [0.5]	Human Rights: Theories and Foundations	
3. 0.5 credit in:		0.5
HUMR 2202 [0.5]	Power Relations and Human Rights	
4. 0.5 credit from:		0.5
LAWS 2105 [0.5]	Social Justice and Human Rights	
PHIL 2103 [0.5]	Philosophy of Human Rights	
PSCI 3307 [0.5]	Politics of Human Rights	
5. 2.5 credits, comprised of 0.5 credit from each of the five Thematic Groups (see list under Course Categories)		2.5
6. 1.0 credit at the 4000-level from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)		1.0
7. 3.0 credits from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)		3.0
B. Credits Not Included in the Major CGPA (11.0 credits)		
8. 11.0 credits in free electives.		11.0
Total Credits		20.0

Human Rights and Social Justice

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit from:		1.0
HUMR 1001 [1.0]	Introduction to Human Rights	
FYSM 1104 [1.0]	Human Rights: Issues and Investigations	
FYSM 1502 [1.0]	Selected Topics in Legal Studies (specifically the section on Global Governance and Human Rights)	
or approved FYSM		
2. 0.5 credit in:		0.5
HUMR 2001 [0.5]	Human Rights: Theories and Foundations	
3. 0.5 credit in:		0.5
HUMR 2202 [0.5]	Power Relations and Human Rights	
4. 0.5 credit from:		0.5
LAWS 2105 [0.5]	Social Justice and Human Rights	
PHIL 2103 [0.5]	Philosophy of Human Rights	
PSCI 3307 [0.5]	Politics of Human Rights	
5. 2.5 credits, comprised of 0.5 credit from each of the five Thematic Groups (see list under Course Categories)		2.5

6. 1.0 credit at the 4000-level from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)	1.0
7. 1.0 credit from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)	1.0
B. Additional Credit Requirements (13.0 credits)	13.0
8. The requirements for the other discipline must be satisfied	
9. Sufficient free electives to make 20.0 credits total for the program	
Total Credits	20.0

Human Rights and Law with Concentration in Transnational Law and Human Rights

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit from:		1.0
HUMR 1001 [1.0]	Introduction to Human Rights	
FYSM 1104 [1.0]	Human Rights: Issues and Investigations	
FYSM 1502 [1.0]	Selected Topics in Legal Studies (the section on Global Governance and Human Rights)	
or approved FYSM		
2. 0.5 credit in:		0.5
HUMR 2001 [0.5]	Human Rights: Theories and Foundations	
3. 0.5 credit in:		0.5
HUMR 2202 [0.5]	Power Relations and Human Rights	
4. 2.5 credits, comprised of 0.5 credit from each of the five Thematic Groups (see list under Course Categories)		2.5
5. 1.0 credit at the 4000-level from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)		1.0
6. 1.5 credits from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)		1.5
B. Additional Credit Requirements (13.0 credits)		13.0
7. The requirements for the other discipline must be satisfied		
8. Sufficient free electives to make 20.0 credits total for the program .		
Total Credits		20.0

Human Rights and Social Justice

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.0 credit from:		1.0
HUMR 1001 [1.0]	Introduction to Human Rights	
FYSM 1104 [1.0]	Human Rights: Issues and Investigations	
FYSM 1502 [1.0]	Selected Topics in Legal Studies (specifically the section on Global Governance and Human Rights)	
or an approved First-Year Seminar		
2. 0.5 credit in:		0.5
HUMR 2001 [0.5]	Human Rights: Theories and Foundations	
3. 0.5 credit in:		0.5
HUMR 2202 [0.5]	Power Relations and Human Rights	
4. 0.5 credit from:		0.5

LAWS 2105 [0.5]	Social Justice and Human Rights	
PHIL 2103 [0.5]	Philosophy of Human Rights	
PSCI 3307 [0.5]	Politics of Human Rights	
5. 2.5 credits, comprised of 0.5 credit from each of the five Thematic Groups (see list under Course Categories)		2.5
6. 1.0 credit at the 3000- or 4000-level from Thematic Groups and/or Human Rights Electives (see lists under Course Categories)		1.0
7. 1.0 credit from Thematic groups and/or Human Rights Electives (see lists under Course Categories)		1.0
B. Credits Not Included in the Major CGPA (8.0 credits)		
8. 8.0 credits in free electives.		8.0
Total Credits		15.0

Minor in Human Rights and Social Justice (4.0 credits)

Open to all undergraduate students not in Human Rights and Social Justice B.A. programs.

Requirements:

1. 1.0 credit from:		1.0
HUMR 1001 [1.0]	Introduction to Human Rights	
FYSM 1104 [1.0]	Human Rights: Issues and Investigations	
2. 1.0 credit in:		1.0
HUMR 2001 [0.5]	Human Rights: Theories and Foundations	
HUMR 2202 [0.5]	Power Relations and Human Rights	
3. 1.0 credit at the 2000-level or higher in Human Rights (HUMR) courses		1.0
4. 1.0 credit at the 3000-level or higher in Human Rights (HUMR) courses		1.0
Total Credits		4.0

Course Categories by Thematic Group

Some of the Human Rights Electives have prerequisites that are not explicitly included in the program. Students should plan to have credit for the prerequisites of each course in their program or ask to have the prerequisite waived.

Laws and Institutions

LAWS 2105 [0.5]	Social Justice and Human Rights
LAWS 2502 [0.5]	Law, State and Citizen
LAWS 2601 [0.5]	Public International Law
LAWS 3401 [0.5]	Employment Law
LAWS 3509 [0.5]	The Charter of Rights Topics
LAWS 3602 [0.5]	International Human Rights
LAWS 3604 [0.5]	International Organizations
LAWS 4601 [0.5]	Transnational Law and Human Rights
LAWS 4606 [0.5]	International Law of Armed Conflict
LAWS 4607 [0.5]	Immigration and Refugee Law
PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 3600 [0.5]	International Institutions
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms

Critical Principles

CRST 2001 [0.5]	Introduction to Critical Race Studies
CRST 4001 [0.5]	Advanced Critical Race Studies

HIST 3510 [0.5]	Indigenous Peoples of Canada
HUMR 2202 [0.5]	Power Relations and Human Rights
HUMR 3202 [0.5]	Human Rights and Resistance
HUMR 3503 [0.5]	Global Environmental Justice
HUMR 4201 [0.5]	Citizenship and Human Rights
HUMR 4405 [0.5]	Digital Dis-information and Human Rights
LAWS 2105 [0.5]	Social Justice and Human Rights
LAWS 4002 [0.5]	Feminist Theories of Law
LAWS 4101 [0.5]	Contemporary Justice Theories
LAWS 4102 [0.5]	Controversies in Rights Theory
LAWS 4105 [0.5]	Global Justice Theory
PHIL 2101 [0.5]	History of Ethics
PHIL 2103 [0.5]	Philosophy of Human Rights
PHIL 2306 [0.5]	Philosophy and Feminism
PHIL 2307 [0.5]	Gender and Philosophy
PHIL 2408 [0.5]	Bioethics
PHIL 3320 [0.5]	Contemporary Ethical Theory
PHIL 3330 [0.5]	Topics in History of Social and Political Philosophy
PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3801 [0.5]	Environmental Politics
Marginalized Groups, Diversities & Identities	
ANTH 2020 [0.5]	Race and Ethnicity
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 4020 [0.5]	Advanced Studies in Race and Ethnicity
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples
HIST 3710 [0.5]	Themes in Caribbean History
HUMR 2102 [0.5]	Sexuality, Gender, and Security
HUMR 2301 [0.5]	Human Rights and Sexualities
HUMR 3301 [0.5]	Racialization, Racism and Human Rights
HUMR 3302 [0.5]	Culture, Religion, and Women's Human Rights
HUMR 3303 [0.5]	Children's Rights
HUMR 3304 [0.5]	Disability Rights
HUMR 3305 [0.5]	Anti-Black Racism
HUMR 4302 [0.5]	Transgender Human Rights
HUMR 4305 [0.5]	Disability and Social Justice
HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World
HUMR 4504 [0.5]	Black Health
HUMR 4602 [0.5]	Is Religious Freedom a Human Right?
INDG 2011 [0.5]	Contemporary Indigenous Studies
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence
LAWS 3503 [0.5]	Equality and Discrimination
LAWS 3504 [0.5]	Law and Aboriginal Peoples
LAWS 4001 [0.5]	Law, Family and Gender
LAWS 4002 [0.5]	Feminist Theories of Law

LAWS 4504 [0.5]	Indigenous Criminal Justice	SOCI 2160 [0.5]	War and Society
PSCI 2500 [0.5]	Gender and Politics	SOCI 3160 [0.5]	Political Violence
PSCI 3805 [0.5]	Politics of Race	SOCI 4160 [0.5]	War, Terrorism and State Terrorism
PSCI 4206 [0.5]	Indigenous Politics of North America	SOCI 4200 [0.5]	War, Security and Citizenship
PSCI 4403 [0.5]	Reproductive Rights Policy in North America	SXST 2102 [0.5]	Sexuality, Gender, and Security
PSCI 4605 [0.5]	Gender in International Relations	Social and Economic Justice	
SOCI 2020 [0.5]	Race and Ethnicity	ANTH 2850 [0.5]	Development and Underdevelopment
SOCI 2045 [0.5]	Gender and Society	ANTH 3025 [0.5]	Anthropology and Human Rights
SOCI 3019 [0.5]	Sociology of International Migration	ANTH 3027 [0.5]	Studies in Globalization and Human Rights
SOCI 3020 [0.5]	Studies in Race and Ethnicity	ANTH 4730 [0.5]	Colonialism and Post-Colonialism
SOCI 3040 [0.5]	Studies in the Sociology of Gender	ANTH 4750 [0.5]	Advanced Studies in Globalization and Citizenship
SOCI 4020 [0.5]	Advanced Studies in Race and Ethnicity	HIST 3217 [0.5]	Empire and Globalization
SOCI 4039 [0.5]	Women in Contemporary Middle East Societies	HUMR 2502 [0.5]	Social and Political Movements
SOCI 4040 [0.5]	Feminist Sociology of Intersectionality	HUMR 3002 [0.5]	Right to the City
SOWK 4102 [0.5]	Indigenous Peoples and Social Policy	HUMR 3501 [0.5]	Social, Economic and Cultural Rights
SOWK 4300 [0.5]	Social Work and Persons with Disabilities	HUMR 3503 [0.5]	Global Environmental Justice
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction	HUMR 3504 [0.5]	Public Health and Human Rights
SXST 2102 [0.5]	Sexuality, Gender, and Security	HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
SXST 4101 [0.5]	Interdisciplinary Studies of Sexuality	HUMR 4505 [0.5]	Precarity in Labour and Work
WGST 2800 [0.5]	Intersectional Identities	LAWS 4001 [0.5]	Law, Family and Gender
WGST 2803 [0.5]	Body Matters: The Politics of Bodies	LAWS 4800 [0.5]	Environment and Social Justice
WGST 3803 [0.5]	Feminisms and Transnationalism	PSCI 2102 [0.5]	Comparative Politics of the Global South
WGST 3807 [0.5]	Gendered Violence	PSCI 2602 [0.5]	International Relations: Global Political Economy
Political Violence, Persecution and Repression			
HIST 3714 [0.5]	The Holocaust: Historical and Religious Dimensions	PSCI 3100 [0.5]	Politics of Development in Africa
HUMR 2102 [0.5]	Sexuality, Gender, and Security	PSCI 3105 [0.5]	Imperialism
HUMR 2401 [0.5]	Political Repression	PSCI 3204 [0.5]	Politics of Latin America
HUMR 3401 [0.5]	Histories of Persecution and Genocide	PSCI 3502 [0.5]	Gender and Politics: Global South
HUMR 4404 [0.5]	Rights of Refugees and Displaced Persons	PSCI 3802 [0.5]	Globalization and Human Rights
HUMR 4409 [0.5]	Counter-terrorism and Human Rights	PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
LAWS 4106 [0.5]	Law and Violence	PSCI 4105 [0.5]	Selected Problems in Development in the Global South
LAWS 4304 [0.5]	Policing and Social Surveillance	PSCI 4500 [0.5]	Gender and Globalization
LAWS 4309 [0.5]	State Security and Dissent	SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
LAWS 4601 [0.5]	Transnational Law and Human Rights	SOCI 2040 [0.5]	Food, Culture and Society
LAWS 4603 [0.5]	Transitional Justice	SOCI 2050 [0.5]	Sociology of Health
LAWS 4606 [0.5]	International Law of Armed Conflict	SOCI 3010 [0.5]	Power, Oppression and Resistance
LAWS 4607 [0.5]	Immigration and Refugee Law	SOCI 3027 [0.5]	Globalization and Human Rights
PSCI 3107 [0.5]	The Causes of War	SOCI 3040 [0.5]	Studies in the Sociology of Gender
PSCI 3702 [0.5]	Israeli-Palestinian Relations	SOCI 3044 [0.5]	Sociology of Sex and Sexuality
PSCI 4807 [0.5]	Politics of Citizenship and Migration	SOCI 3050 [0.5]	Studies in the Sociology of Health
PSCI 4817 [0.5]	International Politics of Forced Migration	SOCI 3056 [0.5]	Women and Health
RELI 3140 [0.5]	The Holocaust: Historical and Religious Dimensions	SOCI 3430 [0.5]	Studies in Collective Action and Social Movements
		SOCI 4040 [0.5]	Feminist Sociology of Intersectionality
		SOCI 4730 [0.5]	Colonialism and Post-Colonialism
		SOCI 4750 [0.5]	Advanced Studies in Globalization and Citizenship

SOWK 3206 [0.5]	Community Development and Social Change in an International Context
SOWK 3207 [0.5]	Human Rights Practice in Civil Society
WGST 2800 [0.5]	Intersectional Identities
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
Human Rights Electives	
HUMR 3001 [0.5]	Special Topics in Human Rights
HUMR 4905 [0.5]	Practicum Placement in Human Rights I
HUMR 4906 [0.5]	Practicum Placement in Human Rights II
HUMR 4907 [0.5]	Special Topic in Human Rights
HUMR 4908 [0.5]	Independent Study

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music,

Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and

B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take

careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English

language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Human Rights (HUMR) Courses

HUMR 1001 [1.0 credit]

Introduction to Human Rights

Human rights from an interdisciplinary perspective. Topics may include the foundations and nature of rights, roots of inequality and oppression, aboriginal rights, racism, women and rights, sexual orientation, state and corporate power, economic exploitation, the environment and rights, warfare, torture, and social movements.

Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1104.

Lecture and discussion groups/tutorials three hours a week.

HUMR 2001 [0.5 credit]

Human Rights: Theories and Foundations

Historical overview of the theoretical and philosophical approaches underlying the human rights movement and relevant to the normative ideals and aspirations of human rights and to the strategies of their implementation.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.

Lectures and discussion groups/tutorials three hours a week.

HUMR 2102 [0.5 credit]

Sexuality, Gender, and Security

Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how 'subversives' were created through discourse and administrative logics such as policy and law.

Includes: Experiential Learning Activity
Also listed as SXST 2102.

Prerequisite(s): second year standing or permission from the Institute.

Lectures and discussions three hours a week.

HUMR 2202 [0.5 credit]

Power Relations and Human Rights

The study of power from a critical, transnational perspective; the impact on human rights of different forms and modalities of power, including those emanating from the state and corporations and those implicated in socio-economic and other hierarchical relations.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.

Lectures and discussion groups/tutorials three hours a week.

HUMR 2301 [0.5 credit]

Human Rights and Sexualities

Human rights issues in various cultural contexts concerning sex and/or gender, with attention to sexual minorities such as gay, lesbian, and transgendered persons. Forms of discrimination against sexual minorities and the mechanisms and strategies for redress.

Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

HUMR 2401 [0.5 credit]**Political Repression**

Canada is home-in-exile to many who have faced severe and often life-threatening political repression such as imprisonment, torture, surveillance, population transfer, etc. This course examines the impacts on survivors of political repression, and strategies used to overcome its legacies.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

HUMR 2502 [0.5 credit]**Social and Political Movements**

The underlying conditions and developments of historical and contemporary social and political movements; specific social movements such as civil rights or gay rights.

Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

HUMR 3001 [0.5 credit]**Special Topics in Human Rights**

This advanced seminar will cover current and topical issues and/or debates in human rights, and will enable students to engage in focused discussions and analyses of these issues. Topics will vary from year to year.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3002 [0.5 credit]**Right to the City**

"The right to the city" as an emerging focus of advocacy and analysis in urban movements for social justice around especially the local and transnational dimensions of the "right to the city" movement.

Precludes additional credit for HUMR 3001 if taken prior to 2013-14.

Prerequisite(s): third year standing.

Lectures three hours a week.

HUMR 3202 [0.5 credit]**Human Rights and Resistance**

This course problematizes human rights paradigms and critically examines the limitations of the political within liberal democracies. Bringing together theory and politics, alternative approaches to activism are explored. Topics may include struggles grounded in radical democracy, anti-capitalism, and social justice perspectives.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3301 [0.5 credit]**Racialization, Racism and Human Rights**

The forms and effects of systemic race-based human rights abuses. Topics may include immigration and refugee policies and practices, anti-apartheid regimes, racial profiling, the racial politics of "nationhood" and armed conflict, civil rights and resistance movements in differing cultural contexts.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Seminar and discussion groups three hours a week.

HUMR 3302 [0.5 credit]**Culture, Religion, and Women's Human Rights**

The impact of cultural and religious traditions on gender, race, ethnicity and sexuality. Topics may include debates related to power dynamics, historical issues, geopolitics, and cultural relativism.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3303 [0.5 credit]**Children's Rights**

This course examines children's rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts.

Includes: Experiential Learning Activity

Also listed as CHST 3303.

Precludes additional credit for CHST 3901 (no longer offered).

Prerequisite(s): third-year standing.

Lectures and discussion groups three hours a week.

HUMR 3304 [0.5 credit]**Disability Rights**

A critical approach to the study of disability rights that explores the intersections of disability with race, sexuality, gender, colonialism, 'health', and other discourses.

Precludes additional credit for HUMR 4303 (no longer offered).

Prerequisite(s): third-year standing.

Lecture three hours a week.

HUMR 3305 [0.5 credit]**Anti-Black Racism**

The course examines conceptual linkages between race, racism and anti-black racism and how anti-Blackness racial prejudice is rooted in Black people's experience of enslavement and colonization.

Lecture three hours a week

HUMR 3401 [0.5 credit]**Histories of Persecution and Genocide**

Case studies in persecution and/or genocide in different cultural contexts. The social, political, and legal conditions that have enabled the institutional or state-sanctioned persecution of targeted groups, and the circumstances that had an impact on their decline.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3501 [0.5 credit]**Social, Economic and Cultural Rights**

The development of social, economic and cultural rights, including rights to housing, healthcare, education and employment. Topics may include the international geopolitics of the historical tension between these rights and civil and political rights.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3503 [0.5 credit]**Global Environmental Justice**

Overview of critical debates on environmental issues from a global social justice perspective. Topics may include corporate mining, food sovereignty, poverty, economic exploitation, Indigenous cosmologies and environmental justice, militarization and environmental degradation, privatization of water and climate change.

Prerequisite(s): third-year standing.

Lectures and discussion groups three hours a week.

HUMR 3504 [0.5 credit]**Public Health and Human Rights**

Through a social-scientific analysis of AIDS, this course explores HIV/AIDS as a case study for understanding the politics of public health. Students will critically interrogate the authority of science and explore avenues for democratizing biomedicine and public health policy in various national and policy contexts.

Includes: Experiential Learning Activity

Precludes additional credit for HUMR 3001 Section "A" if taken in 2013-14 and 2014-15.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 4201 [0.5 credit]**Citizenship and Human Rights**

The relationship between citizenship and human rights; how large groups of people, including non-citizens and refugees, are excluded from entitlements to rights.

Why human rights rest on citizenship, and with what implications.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4302 [0.5 credit]**Transgender Human Rights**

Critical analyses of human rights through an examination of transgender subjectivities. The systemic erasure of trans people within society and the struggles of some activists to normalize trans identities.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4305 [0.5 credit]**Disability and Social Justice**

An intersectional national/transnational approach to social justice issues such as poverty/exploitation, labour, representation, decolonization, race/racism, sexuality and gender from a critical disability studies perspective.

Prerequisite(s): fourth-year standing in Human Rights or Disability Studies.

Seminar three hours a week.

HUMR 4401 [0.5 credit]**Gender, Citizenship and Social Justice in a Transnational World**

This seminar critically engages with transnational, gendered, classed, and racialized discursive practices of citizenship, human rights, the geopolitics of knowledge and processes of dehumanization through the lenses of decolonial social justice.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4404 [0.5 credit]**Rights of Refugees and Displaced Persons**

Contemporary issues concerning the rights of refugees and displaced persons, from social, political, and legal perspectives; Canadian and international dimensions of these issues.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar and discussion groups three hours a week.

HUMR 4405 [0.5 credit]**Digital Dis-information and Human Rights**

The course examines the phenomenon of disinformation or 'fake news' in the era of digital technology, its intent and links to structures of power and oppression, and its impacts on human rights and the social justice.

Includes: Experiential Learning Activity

Seminar three hours a week.

HUMR 4409 [0.5 credit]**Counter-terrorism and Human Rights**

Examines policies and strategies states and international organizations use to combat global terrorism and the challenges these initiatives pose to the international human rights regime, democratic norms, and social justice.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar three hours per week.

HUMR 4502 [0.5 credit]**Global Indigenous Knowledges and Movements**

Indigenous Peoples contributions to world knowledge through community resistance, social movements and scholarship. How processes of corporate globalization impact Indigenous Peoples lives as an ongoing process of normalizing a reconfigured modern coloniality of power.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4504 [0.5 credit]**Black Health**

The course examines conceptual linkages between race, racism and anti-black racism and how anti-Blackness racial prejudice is rooted in Black people's experience of enslavement and colonization.

Seminar three hours a week.

HUMR 4505 [0.5 credit]**Precarity in Labour and Work**

This course explores how precarious employment and labour arises; the nature and forms of precariousness; how race, citizenship, gender, religion, and location impact precarity; the link between labor and social movements; and types of political and economic initiatives in response to the deepening precarity.

Seminar three hours a week.

HUMR 4602 [0.5 credit]**Is Religious Freedom a Human Right?**

Legal, theoretical, and theological interconnections between religion and human rights. Evaluation of concepts including religious freedom, secularism, public sphere, accommodation and neutrality. Examination of religion and culture, interdependence of legal and religious perspectives, boundaries of religion and state, and religious compulsion. Use of case studies.

Also listed as LAWS 4602, RELI 4602.

Prerequisite(s): fourth-year standing.

Seminars three hours a week.

HUMR 4905 [0.5 credit]**Practicum Placement in Human Rights I**

This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Human Rights or permission of the Institute.

HUMR 4906 [0.5 credit]**Practicum Placement in Human Rights II**

This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Human Rights and a GPA of 9.8 or higher or permission of the Institute.

HUMR 4907 [0.5 credit]**Special Topic in Human Rights**

This course features a detailed study of a special topic in any area of Human Rights. Topics and themes will vary from year to year.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4908 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with an instructor.

Includes: Experiential Learning Activity

Prerequisite(s): normally restricted to students with at least 3.0 credits of Human Rights courses with at least a CGPA of 9.0 or better in Human Rights courses and permission of the Institute.

Humanities

This section presents the requirements for programs in:

- Humanities B.Hum. Honours
- Humanities B.Hum. Combined Honours
- Biology and Humanities B.Hum. Combined Honours

The B.Hum. Honours is available with a Study Year Abroad option. Consult the B.Hum. Honours program requirements for more information.

Program Requirements**Language Requirement**

Language courses are normally selected from the following list and chosen in consultation with the College's Academic Advisor. It may be necessary to fulfill a prerequisite before taking these courses.

- GREK 2200 and GREK 2201
- LATN 2200 and LATN 2201
- FREN 1100 [1.0] or FREN 2100 [1.0]
- GERM 2010 and GERM 2020, or GERM 2110 [1.0]
- ITAL 2010 and ITAL 2020, or ITAL 2110 [1.0]
- RELI 2010
- RUSS 2010 and RUSS 2020
- SPAN 2010 and SPAN 2020, or SPAN 2110 [1.0]

Humanities**B.Hum. Honours (20.0 credits)**

1. 4.0 credits in Humanities Core:	4.0
HUMS 1000 [1.0]	Myth and Symbol
HUMS 2000 [1.0]	Reason and Revelation
HUMS 3000 [1.0]	Culture and Imagination
HUMS 4000 [1.0]	Politics, Modernity and the Common Good
2. 3.0 credits in:	3.0
HUMS 1005 [0.5]	Early Human Cultures
HUMS 1200 [0.5]	Humanities and Classical Civilisation
HUMS 3200 [1.0]	European Literature
HUMS 4103 [0.5]	Science in the Modern World
HUMS 4500 [0.5]	Modern Intellectual History
3. 2.0 credits in:	2.0
HUMS 2101 [0.5]	Art from Antiquity to the Medieval World
HUMS 2102 [0.5]	Modern European Art 1527-2000
HUMS 3102 [0.5]	Western Music 1000-1850
HUMS 3103 [0.5]	Western Music 1850-2000

(See Note, below)	
4. 2.0 credits in:	2.0
RELI 1731 [0.5] Varieties of Religious Experience	
RELI 2710 [1.0] Maccabees to Muhammad	
CLCV 2008/ Greek and Roman Epic	
ENGL 2012 [0.5]	
or	
CLCV 2010/ Greek and Roman Drama	
ENGL 2605 [0.5]	
5. 1.0 credit fulfilling the language requirement	1.0
6. 1.0 credit from:	1.0
CLCV 2902 [0.5] Origins of the Greeks	
CLCV 2903 [0.5] Democracy to Alexander	
CLCV 2904 [0.5] Rise of the Roman Empire	
CLCV 2905 [0.5] Rome of the Caesars	
HIST 3215 [0.5] Ancient Greek Science	
HIST 3216 [0.5] The Scientific Revolution	
PHIL 2005 [1.0] Ancient Philosophy: The Search for Wisdom	
PSCI 2301 [0.5] History of Political Thought I	
PSCI 2302 [0.5] History of Political Thought II	
7. 5.0 credits in:	5.0
a. 1.0 credit at the 2000 level or above	
b. 1.0 credit from:	
HUMS 4901 [0.5] Research Seminar: Antiquity to the Middle Ages	
HUMS 4902 [0.5] Research Seminar: Renaissance to Enlightenment	
HUMS 4903 [0.5] Research Seminar: Romanticism to the Present	
HUMS 4904 [0.5] Research Seminar: Non-Western Traditions	
c. 1.0 credit from:	
DIGH 3001 [0.5] The Book in the Digital Age	
ENGL 3305 [0.5] Shakespeare and the Stage	
ENGL 3306 [0.5] Shakespeare and Film	
HIST 2204 [0.5] Early Modern Europe 1350-1650	
HIST 2206 [0.5] Early Modern Europe 1600-1800	
HUMS 3500 [0.5] Ancient and Medieval Intellectual History	
HUMS 3550 [0.5] Renaissance and Early Modern Intellectual History	
PHIL 3002 [0.5] 17th Century Philosophy	
PHIL 3003 [0.5] 18th Century Philosophy	
d. 2.0 credits in electives	
or (for Study Year Abroad)	
a. 5.0 pre-approved credits to be taken at an accredited international institution. Acceptable courses that cannot be equivalenced in a specific discipline will be equivalenced as HUMS courses.	
8. 2.0 credits in free electives.	2.0
Total Credits	20.0

Note: for **Item 3** above, students who transfer into the B. Hum. may use up to 2.0 credits of any previously completed art and/or music courses (with the exception of advanced placement courses); students who study abroad may use up to 2.0 credits of art and/or music courses taken abroad; students enrolled in a Combined Honours in Humanities and Art History or Humanities and Music

may substitute up to 1.0 credit of music or art from their combined discipline for the respective requirement or part thereof.

Humanities

B.Hum. Combined Honours (20.0 credits)

Students already admitted to the B.Hum. may register for a Combined Honours degree in Humanities and any other discipline offered within the B.A. Honours degree as a Combined Honours. . They may also register for a Combined Honours with any other degree program at Carleton that allows the combination. Credits used to satisfy Items 1 through 7 below may also be used to satisfy up to 2.0 credits of the requirements of the other discipline under Item 8. A core seminar in Humanities used to fulfill the requirements of the other discipline will satisfy the 1.5 advanced credit requirement of that discipline. In this case the requirement that advanced credits be 3000-level or above is waived.

Requirements

1. 4.0 credits in Humanities Core:	4.0
HUMS 1000 [1.0] Myth and Symbol	
HUMS 2000 [1.0] Reason and Revelation	
HUMS 3000 [1.0] Culture and Imagination	
HUMS 4000 [1.0] Politics, Modernity and the Common Good	
2. 3.0 credits in:	3.0
HUMS 1005 [0.5] Early Human Cultures	
HUMS 1200 [0.5] Humanities and Classical Civilisation	
HUMS 3200 [1.0] European Literature	
HUMS 4103 [0.5] Science in the Modern World	
HUMS 4500 [0.5] Modern Intellectual History	
3. 2.0 credits in:	2.0
HUMS 2101 [0.5] Art from Antiquity to the Medieval World	
HUMS 2102 [0.5] Modern European Art 1527-2000	
HUMS 3102 [0.5] Western Music 1000-1850	
HUMS 3103 [0.5] Western Music 1850-2000	
(See Note, below)	
4. 2.0 credits in:	2.0
RELI 1731 [0.5] Varieties of Religious Experience	
RELI 2710 [1.0] Maccabees to Muhammad	
CLCV 2008/ Greek and Roman Epic	
ENGL 2012 [0.5]	
or	
CLCV 2010/ Greek and Roman Drama	
ENGL 2605 [0.5]	
5. 1.0 credit fulfilling the language requirement	1.0
6. 0.5 credit at the 2000 level or above	0.5
7. 0.5 credit from:	0.5
HUMS 4901 [0.5] Research Seminar: Antiquity to the Middle Ages	
HUMS 4902 [0.5] Research Seminar: Renaissance to Enlightenment	
HUMS 4903 [0.5] Research Seminar: Romanticism to the Present	
HUMS 4904 [0.5] Research Seminar: Non-Western Traditions	

8. 7.0 credits in electives that include the requirements for the other discipline of the combined degree or the minor. 7.0

Total Credits 20.0

Note: For Item 3 above, students who transfer into the B. Hum. may use up to 2.0 credits of any previously completed art and/or music courses (with the exception of advanced placement courses); students who study abroad may use up to 2.0 credits of art and/or music courses taken abroad; students enrolled in a Combined Honours in Humanities and Art History or Humanities and Music may substitute up to 1.0 credit of music or art from their combined discipline for the respective requirement or part thereof.

Biology and Humanities

B.Hum. Combined Honours (20.0 credits)

A. Credits Included in the Humanities CGPA:

1. 4.0 credits in Humanities Core: 4.0

HUMS 1000 [1.0] Myth and Symbol

HUMS 2000 [1.0] Reason and Revelation

HUMS 3000 [1.0] Culture and Imagination

HUMS 4000 [1.0] Politics, Modernity and the Common Good

2. 1.5 credits in: 1.5

HUMS 1200 [0.5] Humanities and Classical Civilisation

HUMS 3200 [1.0] European Literature

3. 1.0 credit in: 1.0

HUMS 1005 [0.5] Early Human Cultures

RELI 1731 [0.5] Varieties of Religious Experience
or 1.0 credit in an approved Beginner's-level language.

4. 2.0 credits in: 2.0

HUMS 2101 [0.5] Art from Antiquity to the Medieval World

HUMS 2102 [0.5] Modern European Art 1527-2000

HUMS 3102 [0.5] Western Music 1000-1850

HUMS 3103 [0.5] Western Music 1850-2000

(See Note, below)

5. 1.5 credits in: 1.5

RELI 2710 [1.0] Maccabees to Muhammad

CLCV 2008/
ENGL 2012 [0.5] Greek and Roman Epic

or

CLCV 2010/
ENGL 2605 [0.5] Greek and Roman Drama

6. 0.5 credit from: 0.5

HUMS 4901 [0.5] Research Seminar: Antiquity to the Middle Ages

HUMS 4902 [0.5] Research Seminar: Renaissance to Enlightenment

HUMS 4903 [0.5] Research Seminar: Romanticism to the Present

HUMS 4904 [0.5] Research Seminar: Non-Western Traditions

7. 1.0 credit fulfilling the language requirement 1.0

8. 0.5 credit at the 2000-level or above. 0.5

B. Credits Included in the Biology CGPA:

9. 3.0 credits in: 3.0

BIOL 1103 [0.5] Foundations of Biology I

BIOL 1104 [0.5] Foundations of Biology II

BIOL 2001 [0.5] Animals: Form and Function
or BIOL 2002 [0.5] Plants: Form and Function

BIOL 2104 [0.5] Introductory Genetics

or BIOL 2107 [0.5] Fundamentals of Genetics

BIOL 2200 [0.5] Cellular Biochemistry

or BIOL 2201 [0.5] Cell Biology and Biochemistry

BIOL 2303 [0.5] Microbiology

or BIOL 2600 [0.5] Ecology

10. 2.0 credits from: 2.0

CHEM 1001 [0.5] General Chemistry I

& CHEM 1002 [0.5] General Chemistry II

CHEM 1005 [0.5] Elementary Chemistry I

& CHEM 1006 [0.5] Elementary Chemistry II

CHEM 2203 [0.5] Organic Chemistry I

CHEM 2204 [0.5] Organic Chemistry II

CHEM 2207 [0.5] Introduction to Organic Chemistry I

& CHEM 2208 [0.5] Introduction to Organic Chemistry II

11. 3.0 credits in BIOL or BIOC at the 3000 level or above. 3.0

Total Credits 20.0

Note:

- For Item 4 above, students who transfer into the B. Hum. may use up to 2.0 credits of any previously completed art and/or music courses (with the exception of advanced placement courses); students who study abroad may use up to 2.0 credits of art and/or music courses taken abroad; students enrolled in a Combined Honours in Humanities and Art History or Humanities and Music may substitute up to 1.0 credit of music or art from their combined discipline for the respective requirement or part thereof.
- For Items 3 and 7 above, students who must take a beginner's-level prerequisite to their Intermediate Language Requirement should do so in place of RELI 1731 & HUMS 1005. Students who are already able to demonstrate a proficiency in a second-language at an intermediate level may have the requirement waived, and in that case may be required to take an additional elective credit at the 2000-level or above in order to bring their total number of credits up to the required 20.0.
- For items 9 and 10, students taking CHEM 1005 and CHEM 1006 will be required to obtain a grade of B- or higher in CHEM 1006 to take BIOL 2200, and more advanced courses in BIOC and CHEM and advanced laboratory courses in BIOL for which BIOL 2200 is a prerequisite.

B.Hum. with Minor

Students already admitted to the B.Hum may add a minor to their program in any other discipline in the University which offers a minor. Students registered in the Humanities - B.Hum. Honours who add a minor follow the requirements listed under items 6 to 8 of Humanities - B.Hum. Combined Honours instead of the requirements listed under items 6 to 8 of the Humanities - B.Hum. Honours degree.

Regulations

In addition program requirements described in this section, students must satisfy the Academic Regulations of the University, including the process of Academic Continuation Evaluation.

Students should consult the College and its website when planning their program and selecting courses.

Requirement for Full-Time Study

Students in the Humanities program must complete a minimum of 4.0 credits by the end of the summer session. The College may permit students to study abroad for a year while remaining registered in the program. For those students permitted to study abroad, Carleton credits commensurate to studies taken abroad will be determined by the College and awarded towards the student's degree. In exceptional circumstances (usually financial need or sickness) the College may also permit students to take a leave of absence for one year while remaining registered in the program.

Academic Continuation Evaluation for Bachelor of Humanities

Students in the Bachelor of Humanities degree follow the Academic Continuation Evaluation (ACE) regulations described in Section 3.2 of the *Academic Regulations of the University* with the following additions and amendments.

The Bachelor of Humanities degree defines an Overall CGPA and a Core CGPA.

HUMANITIES CORE COURSES

HUMS 1000 [1.0]	Myth and Symbol
HUMS 2000 [1.0]	Reason and Revelation
HUMS 3000 [1.0]	Culture and Imagination
HUMS 4000 [1.0]	Politics, Modernity and the Common Good

At each ACE assessment, Bachelor of Humanities students are evaluated on the basis of their Overall CGPA. The Core CGPA is assessed only at the end of each winter term.

Students are *Eligible to Continue* (EC) if the Overall CGPA is at least 6.50 and the Core CGPA is at least 6.50.

A student who does not receive the status *Eligible to Continue* (EC) but who has an Overall CGPA of at least 6.00 and a Core CGPA of at least 6.00 is placed on *Academic Warning* (AW).

A student is required to leave the program with the decision *Continue in Alternate* (CA) if:

1. the student was on *Academic Warning* (AW) and does not achieve *Eligible to Continue* (EC) at the next ACE assessment,
or
2. the student has an Overall CGPA of less than 6.00 or a Core CGPA of less than 6.00 when assessed.

Transfer from B.Hum. to B.J.Hum.

A student who has completed the first year of the B.Hum. and is *Eligible to Continue* (EC) may apply to transfer into

the second year of the B.J. Hum. and will be accepted at the discretion of the School of Journalism and the College of Humanities, and must normally have an overall CGPA of 10.0 (A-) or higher. Transfers into higher years will not be considered.

Academic Continuation Evaluation for Bachelor of Journalism and Humanities

Students in the Bachelor of Journalism and Humanities degree follow the Academic Continuation Evaluation (ACE) regulations described in Section 3.2 of the *Academic Regulations of the University* with the following additions and amendments.

The Bachelor of Journalism and Humanities degree defines an Overall CGPA, a Journalism Major CGPA, and a Humanities Core CGPA.

HUMANITIES CORE COURSES

HUMS 1000 [1.0]	Myth and Symbol
HUMS 2000 [1.0]	Reason and Revelation
HUMS 3000 [1.0]	Culture and Imagination
HUMS 4000 [1.0]	Politics, Modernity and the Common Good

Whenever the student is assessed in ACE, Bachelor of Journalism and Humanities students are evaluated on the basis of their Overall CGPA. The Humanities Core CGPA is assessed only at the end of each winter term.

1. A student is required to leave the program if:
 - a. the student was on *Academic Warning* (AW) and does not achieve a decision of *Eligible to Continue* (EC) at the next Academic Continuation Evaluation;
 - b. the student's Overall CGPA is less than 1.00;
 - c. the student's Humanities Core CGPA is less than 6.00 when assessed.
2. Students with between 5.5 and 15 credit attempts who do not maintain an Overall CGPA of 4.00 and a Humanities Core CGPA of 6.5, but who have an Overall CGPA of at least 1.00 and a Humanities Core of at least 6.00, will be placed on *Academic Warning* (AW). Students with at least 15.5 credit attempts and who do not meet the graduation requirements of an Overall CGPA of 6.50, a Journalism Major CGPA of 6.50, and a Humanities Core CGPA of 6.50 will be required to leave the program.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite

averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B. Hum. (Honours)
- B. Hum. and Biology (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The Bachelor of Humanities and Biology option must include 4U Chemistry or 4U Biology.

Note: applicants with lower averages may be asked to submit a portfolio in support of their application. For detailed information about the portfolio and whether you are required to submit one, please consult admissions.carleton.ca.

Advanced Standing

The College maintains a number of places in second and third year for students who wish to transfer from Carleton or elsewhere. Applications will be assessed on their merits but normally an overall CGPA of 8.00 (B) or higher is required. On admission, students will not receive credit for courses graded below C-.

Transferring from the B.J.Hum. to the B.J. or B.Hum.

A student who wishes to transfer from the B.J.Hum. to the B.J. or the B.Hum. may apply through Admissions and will be accepted if, upon entry to the new program, they would be *Eligible to Continue* in the new degree program.

Humanities (HUMS) Courses

HUMS 1000 [1.0 credit]

Myth and Symbol

Recurring symbols in myth, epic and ritual representing the relation between the sacred and the profane, the origin of the cosmos, the basis of community, and formative human experiences. Primary sources drawn from ancient India and China, Mesopotamia, the Hebrew Bible, and Indigenous cultures.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 1005 [0.5 credit]

Early Human Cultures

Cultural experiences of small scale societies, including kinship, rituals, magic, social structure, and subsistence. Reading may include the works of classic anthropologists such as Maine, Tylor, Morgan, and Boas.

Precludes additional credit for ANTH 1001 and ANTH 1003.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 1200 [0.5 credit]

Humanities and Classical Civilisation

The ideas which animated ancient Greek and Roman civilisation and which influenced later western cultural movements through a reading of literary, historical, and philosophical works. Authors include Homer, Herodotus, Thucydides, the Greek Tragedians, Plato, Vergil, and Cicero.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 1500 [0.5 credit]

Introduction to the Humanities: Five Books that Changed the World

A reading-intensive course on five influential books from Antiquity to the present day. Works may include the Bible, the Bhagavad Gita, Homer's Odyssey, Plato's Republic, Dante's Inferno, Machiavelli's The Prince, Shakespeare's Hamlet, Mary Shelley's Frankenstein, Nietzsche's Beyond Good and Evil, Marx's Communist Manifesto.

Prerequisite(s): enrolment in a degree program in the Faculty of Arts and Social Sciences, or the Faculty of Public Affairs. Students enrolled in the BHum. program are not eligible to register in this course.

Lecture three hours per week.

HUMS 2000 [1.0 credit]

Reason and Revelation

The origins of philosophy in ancient Greece and its pursuit in the medieval West, with special attention to knowledge, happiness, and love. Readings include works by Plato, Aristotle, Plotinus, Augustine, Boethius, Aquinas, and Dante.

Prerequisite(s): HUMS 1000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 2101 [0.5 credit]

Art from Antiquity to the Medieval World

A chronological and thematic survey of the Arts from the earliest times to ca. 1400.

Precludes additional credit for HUMS 4101 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 2102 [0.5 credit]**Modern European Art 1527-2000**

A chronological and thematic survey of the Arts from the sixteenth to the twenty-first century.

Precludes additional credit for HUMS 4101 (no longer offered) and HUMS 3101 (no longer offered).

Prerequisite(s): HUMS 2101 and restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 3000 [1.0 credit]**Culture and Imagination**

Major forms of literary, artistic, and philosophical expression from 1500-1800. Sources drawn from renaissance humanism, reformation theology, enlightenment and romantic philosophy.

Prerequisite(s): HUMS 2000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 3102 [0.5 credit]**Western Music 1000-1850**

Introduction to basic theory, harmony, history and interpretation of Western music including the Medieval, Renaissance, Baroque, Classical and early Romantic periods.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4102 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 3103 [0.5 credit]**Western Music 1850-2000**

Western music from the mid-nineteenth century to the present with emphasis on the seminal contributions of Liszt, Wagner, Mahler, Debussy, Stravinsky, Schönberg and others.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4102 (no longer offered).

Prerequisite(s): HUMS 3102 and restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 3200 [1.0 credit]**European Literature**

Major movements and works from Dante's Divine Comedy through Voltaire's Candide. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.

Also listed as ENGL 3201.

Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program. English students should have third-year standing with a GPA of B or above.

Lectures three hours a week.

HUMS 3500 [0.5 credit]**Ancient and Medieval Intellectual History**

Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from Archaic Greece to the High Middle Ages.

Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.

Lectures three hours a week.

HUMS 3550 [0.5 credit]**Renaissance and Early Modern Intellectual History**

Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from the Early Renaissance to 1800.

Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.

Lectures three hours a week.

HUMS 3800 [0.5 credit]**Humanities in Context**

Designed for students studying humanities, this travel course explores art, literature, politics, philosophy, architecture, religions, and cultures in their historical and contemporary contexts in a particular geographic locale.

Travel destinations and themes vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): 2.0 credits in HUMS and permission of the department. Permission of the unit is required to repeat this course.

Hours to be arranged.

HUMS 4000 [1.0 credit]**Politics, Modernity and the Common Good**

Modern and post-modern ways of thinking and doing, including revolutionary new ideas in politics, philosophy, culture, economics, and international relations. Thinkers considered include Arendt, Foucault, Hegel, Heidegger, Hobbes, Kant, Marx, Nietzsche, Polanyi, Rousseau, Said, and Taylor.

Includes: Experiential Learning Activity

Prerequisite(s): HUMS3000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 4001 [0.5 credit]**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

HUMS 4002 [0.5 credit]**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program and Good Standing in the program.

HUMS 4103 [0.5 credit]**Science in the Modern World**

An introduction to the major scientific ideas of our time (such as Big Bang theory, molecular genetics, evolution, atomic structure), and the impact of technology on society (e.g. global warming, pollution, genetically modified foods, viral infections).

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4100 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 4500 [0.5 credit]**Modern Intellectual History**

Examination of some of the major ideas and ideologies from 1800 to the present, including romanticism, liberalism, nationalism, symbolism, socialism, Freudianism, communism, feminism, and postmodernism.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4104.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 4901 [0.5 credit]**Research Seminar: Antiquity to the Middle Ages**

An interdisciplinary seminar on a selected topic in the humanities from Antiquity to the Middle Ages. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4902 [0.5 credit]**Research Seminar: Renaissance to Enlightenment**

An interdisciplinary seminar on a selected topic in the humanities from the Renaissance to the Enlightenment. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4903 [0.5 credit]**Research Seminar: Romanticism to the Present**

An interdisciplinary seminar on a selected topic in the humanities from Romanticism to the present. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4904 [0.5 credit]**Research Seminar: Non-Western Traditions**

An interdisciplinary seminar on a selected topic in the humanities as expressed in aboriginal and Non-Western cultures. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

Indigenous Studies

This section presents the requirements for programs in:

- Indigenous Studies B.A. Combined Honours
- Minor in Indigenous Studies

Program Requirements

Indigenous Studies

B.A. Combined Honours (20.0 Credits)

A. Credits Included in the Indigenous Studies Major (7.0 credits)

1. 1.0 credit in:		1.0
INDG 1010 [0.5]	Introduction to Indigenous	
& INDG 1011 [0.5]	Peoplehood Studies	
	Introduction to Indigenous-Settler	
	Encounters	
INDG 1000 [1.0]	Introduction to Indigenous Studies	
2. 1.5 credits in:		1.5
INDG 2011 [0.5]	Contemporary Indigenous Studies	
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality	
3. 1.0 credit in:		1.0
INDG 3001 [0.5]	Indigenous Governance	
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy	
4. 1.0 credit in:		1.0
INDG 4001 [0.5]	Indigeneity in the City	
INDG 4011 [0.5]	Indigenous Representations	
5. 1.5 credits from the list of Approved INDG electives		1.5
6. 1.0 credit at the 4000-level from the list of Approved INDG electives		1.0
B. Additional Requirements (13.0 credits)		13.0
7. The requirements for Combined Honours in the other discipline must be satisfied		
8. Sufficient free electives to achieve a total of 20.0 credits for the program		
Total Credits		20.0

Minor in Indigenous Studies (4.0 credits)

The Minor in Indigenous Studies is open to all undergraduate degree students.

Requirements:

1. 1.0 credit in:		1.0
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	
2. 1.0 credit from:		1.0
INDG 2011 [0.5]	Contemporary Indigenous Studies	
INDG 2012 [0.5]	Anishinaabe Studies	
INDG 2013 [0.5]	Haudenosaunee Studies	
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality	
3. 1.0 credit from:		1.0
INDG 3001 [0.5]	Indigenous Governance	
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy	
INDG 3901 [0.5]	Selected Topics in Indigenous Studies	
INDG 4001 [0.5]	Indigeneity in the City	
INDG 4011 [0.5]	Indigenous Representations	
INDG 4015 [0.5]	Land as a Relation	
INDG 4020 [0.5]	Practicum	
INDG 4905 [0.5]	Directed Studies I	
4. 1.0 credit from	the list of approved Indigenous Studies Electives	1.0
5.	The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits		4.0

Indigenous Studies Electives

The following courses are deemed by the School of Indigenous and Canadian Studies to have significant Indigenous content, and can be included where appropriate as part of an Indigenous Studies program. Carleton courses not on this list may be applied as approved Indigenous Studies electives, but they must be approved by the Indigenous Studies Undergraduate Supervisor. Students taking courses at the University of Ottawa should consult with the Indigenous Studies Undergraduate Supervisor to gain approval for substituting them as approved Indigenous Studies electives.

African Studies

AFRI 1001 [0.5]	Introduction to African Studies I
AFRI 1002 [0.5]	Introduction to African Studies II
AFRI 3001 [0.5]	Globalization and Popular Culture in Africa
AFRI 3100 [0.5]	African Studies Abroad: Selected Topics
AFRI 4000 [0.5]	Advanced Topics in African Studies
AFRI 4050 [0.5]	Selected Topics in African Studies

Anthropology

ANTH 2610 [0.5]	Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research
ANTH 2620 [0.5]	Ethnography of Sub-Saharan Africa
ANTH 2630 [0.5]	Studies in Asian Societies: Current Issues in Anthropological Research
ANTH 2640 [0.5]	Andean Ethnography
ANTH 2650 [0.5]	Ethnography of Mesoamerica
ANTH 2660 [0.5]	Ethnography of North Africa
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 3570 [0.5]	Studies in Art, Culture and Society
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples
ANTH 4620 [0.5]	Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research
ANTH 4730 [0.5]	Colonialism and Post-Colonialism

Art History

ARTH 2005 [0.5]	Arts of the First Peoples: The Woodlands, the Plains and the Subarctic
ARTH 2006 [0.5]	Arts of the First Peoples: The Southwest, the West Coast and the Arctic
ARTH 2008 [0.5]	Inuit Art
ARTH 4005 [0.5]	Topics in Contemporary Indigenous Art

Canadian Studies

CDNS 4800 [1.0]	Internship Practicum
CDNS 4801 [0.5]	Internship/Practicum
CDNS 4802 [0.5]	Internship/Practicum
CDNS 4901 [0.5]	Selected Topics in Canadian Studies
CDNS 4902 [0.5]	Selected Topics in Canadian Studies
CDNS 4903 [0.5]	Études dirigées I
CDNS 4904 [0.5]	Études dirigées II
CDNS 4905 [0.5]	Directed Studies I
CDNS 4906 [0.5]	Directed Studies II
CDNS 4907 [1.0]	Directed Studies III
(Provided they have Indigenous content)	

Child Studies

CHST 3002 [0.5]	Special Topics in Child Studies
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English

ENGL 2709 [0.5]	Indigenous Drama
ENGL 2926 [0.5]	African Literatures I
ENGL 2927 [0.5]	African Literatures II
ENGL 2936 [0.5]	South Asian Literatures I
ENGL 2937 [0.5]	South Asian Literatures II
ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
ENGL 3960 [0.5]	Studies in Indigenous Literature
ENGL 3965 [0.5]	Intro to Postcolonial Theory
ENGL 3972 [0.5]	Studies in Postcolonial Literature
ENGL 4960 [0.5]	Indigenous Literatures I
ENGL 4961 [0.5]	Indigenous Literatures II
ENGL 4975 [0.5]	Issues in Postcolonial Theory

ENGL 4976 [0.5]	Issues in Postcolonial Literature
First Year Seminar	
FYSM 1900 [1.0]	Selected Topics In the Study of Academic Discourses (specifically the section on Aboriginal Topics)
Geography	
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3501 [0.5]	Geographies of the Canadian North
History	
HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2311 [0.5]	Environmental History of Canada
HIST 2706 [0.5]	Ancient and Pre-Colonial Africa
HIST 2707 [0.5]	Modern Africa
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 3505 [0.5]	Women in Canada
HIST 3510 [0.5]	Indigenous Peoples of Canada
HIST 3511 [0.5]	Themes in Indigenous History
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3712 [0.5]	Mexico: Aztecs to Narcos
HIST 3713 [0.5]	Gender and Sexuality in Latin America
HIST 3715 [0.5]	Themes in South Asian History
HIST 3717 [0.5]	Gender and Sexuality in Africa
Human Rights	
HUMR 3503 [0.5]	Global Environmental Justice
HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
Latin and Caribbean Studies	
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies
Law	
LAWS 2201 [0.5]	Persons and Property
LAWS 2202 [0.5]	Obligations
LAWS 2501 [0.5]	Law, State and Constitution
LAWS 2502 [0.5]	Law, State and Citizen
LAWS 3504 [0.5]	Law and Aboriginal Peoples
LAWS 4504 [0.5]	Indigenous Criminal Justice
Linguistics and Language Studies	
LANG 1010 [0.5]	Introduction to a Language I
LANG 1020 [0.5]	Introduction to a Language II (When the language offered is an Indigenous language of Canada)
Music	
MUSI 3106 [0.5]	Popular Musics of the World
MUSI 4104 [0.5]	First Peoples Music in Canada
MUSI 4105 [0.5]	Study of Musics in Africa
Political Science	
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3105 [0.5]	Imperialism
PSCI 3203 [0.5]	Government and Politics in the Middle East

PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms
PSCI 4203 [0.5]	Southern Africa After Apartheid
PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
Religion	
RELI 2720 [0.5]	Indigenous Religions of Canada
RELI 2800 [0.5]	Indigenous Traditions
Sexuality Studies	
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
SXST 3104 [0.5]	Transnational Sexualities
Social Work	
SOWK 4102 [0.5]	Indigenous Peoples and Social Policy
Women's and Gender Studies	
WGST 2800 [0.5]	Intersectional Identities
WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3807 [0.5]	Gendered Violence

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTN, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public

Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow

the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Indigenous Studies (INDG) Courses

INDG 1000 [1.0 credit]

Introduction to Indigenous Studies

Survey of historical and contemporary issues relating to Indigenous peoples in Canada. Cultural traditions and the social interactions between Indigenous and non-Indigenous societies are approached from an interdisciplinary perspective. Precludes additional credit for INDG 1010 and INDG 1011. Online only.

INDG 1010 [0.5 credit]

Introduction to Indigenous Peoplehood Studies

This course begins by looking at Creation Stories of different Indigenous peoples and builds to discuss Indigenous worldviews, ways of living, ecological relationships, inter-Indigenous relations and diplomacy among Indigenous peoples. Course materials are rooted in self-situated and collective understandings of Indigenous peoples.

Precludes additional credit for INDG 1000.

Lecture/groups, three hours a week.

INDG 1011 [0.5 credit]

Introduction to Indigenous-Settler Encounters

An interdisciplinary examination of the history of relations between different Indigenous peoples and settler populations from first meetings to the mid-20th century. Topics vary by year, but may include diplomatic relations, trade, spirituality and religion, military alliances, policy, education.

Precludes additional credit for INDG 1000.

Lecture/groups, three hours a week.

INDG 2011 [0.5 credit]

Contemporary Indigenous Studies

Indigenous and non-Indigenous perspectives on issues since the 1960s. Topics include: contemporary explorations of treaty relationship and governance, cultural appropriation, identity politics, urban Aboriginality and contemporary social and cultural issues.

Precludes additional credit for CDNS 2100 and CDNS 2011.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

INDG 2012 [0.5 credit]

Anishinaabe Studies

In-depth look at the Anishinaabe peoples. Topics may include: Anishinaabe creation stories, migration, the clan system, worldviews; oral, written, and recorded history; treaties, contemporary events, ecological knowing, cultural production, relations with settler-colonies and other nations, self-governance, diplomatic relations.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups three hours a week.

INDG 2013 [0.5 credit]

Haudenosaunee Studies

Focuses on the Haudenosaunee from the founding of the Confederacy to present. Discussion of the culture, language, and structure of Haudenosaunee society, the Kaienerekowa (Great Law of Peace) and the Code of Handsome Lake, symbolism, and contemporary issues, including the impact of Euro-Canadian government policies.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2015 [0.5 credit]

Indigenous Ecological Ways of Knowing

Indigenous peoples' relationships with the non-human world in both historical and contemporary contexts. Topics may include: the origins of Indigenous ecological ways of knowing, Indigenous languages, collective stewardship, water, land, and challenges to maintaining traditional knowledge.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2020 [0.5 credit]

Decolonizing Gender, Sex, and Sexuality

Effects of colonization in unbalancing Indigenous peoples' lives through the imposition of constructions of gender, sex, and sexuality, and the ways that Indigenous peoples are working to restore balance to their families and communities. Topics vary by year.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2709 [0.5 credit]

Indigenous Drama

A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors and other practitioners.

Also listed as ENGL 2709.

Prerequisite(s): second-year standing or permission of the School.

Lecture three hours per week

INDG 3001 [0.5 credit]**Indigenous Governance**

An examination and discussion of different Indigenous forms of governance. Topics will vary by year and may include: Indigenous ways of knowing and forms of governance, community leadership, diplomatic relations, and struggles for self-determination.

Precludes additional credit for INDG 3000 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3011 [0.5 credit]**Indigenous Rights, Resistance, and Resurgence**

Indigenous approaches to restoring balance within their nations. Topics include: direct action; political organizing; land claims; rights, courts, and legal action; everyday acts of resistance and resurgence such as petitioning, social media, arts-based movements, and community initiatives.

Includes: Experiential Learning Activity

Precludes additional credit for INDG 3010 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3015 [0.5 credit]**Indigenous Ecological Ways of Knowing and the Academy**

The relationship between Indigenous traditional ecological knowledges and the academy. Topics include: linguistic barriers, tensions in diffuse ways of knowing, research ethics with respect to Indigenous traditional knowledge, and working with knowledge holders.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3901 [0.5 credit]**Selected Topics in Indigenous Studies**

Topics vary from year to year.

Prerequisite(s): third- or fourth-year standing, or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4001 [0.5 credit]**Indigeneity in the City**

This course begins with an examination of the relationship between Indigenous peoples and the construction of cities and urban space. Culminates in the undertaking of research projects that directly link students to the urban Indigenous community in Ottawa.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4011 [0.5 credit]**Indigenous Representations**

Through an examination of instances of Indigenous misrepresentation, students will explore how Indigenous peoples have used cultural production in various forms (such as literature, film, television, visual arts, music, performance) to put forth their own visions of their peoples, worldviews, and lives.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

INDG 4015 [0.5 credit]**Land as a Relation**

This is an intensive 14-day field course that brings students together with knowledge holders on the land. The connections between Indigenous ways of knowing, the land, Indigenous languages, and the land's non-human inhabitants, will be explored. Locations and course fee varies by year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Fourteen-day field course.

INDG 4020 [0.5 credit]**Practicum**

Students will learn to apply their knowledge of topics in Indigenous Studies with a local organization whose mandate involves working with and/or for Indigenous peoples. To be arranged in consultation with the Program Coordinator.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

INDG 4901 [0.5 credit]**Selected Topics in Indigenous Studies**

Topics vary from year to year.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4905 [0.5 credit]**Directed Studies I**

An optional course normally restricted to fourth-year Honours students in Canadian Studies or Indigenous Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in an Indigenous Studies area.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Industrial Design

This section presents the requirements for programs in:

- Industrial Design B.I.D.
- Minor in Design

Program Requirements

Industrial Design B.I.D. (20.0 credits)

First Year

1. 5.0 credits in:	5.0
IDES 1000 [0.5]	Theory and History of Design
IDES 1001 [0.5]	Industrial Design Analysis
IDES 1300 [0.5]	Projects IA
IDES 1301 [0.5]	Projects IB
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
MATH 1107 [0.5]	Linear Algebra I
PSYC 1001 [0.5]	Introduction to Psychology I
PSYC 1002 [0.5]	Introduction to Psychology II
PHYS 1007 [0.5]	Elementary University Physics I

Second Year

2. 4.0 credits in:	4.0
IDES 2101 [0.5]	Design for Manufacturing A
IDES 2102 [0.5]	Design for Manufacturing B
IDES 2104 [0.5]	Computer Applications A
IDES 2105 [0.5]	Computer Applications B
IDES 2205 [0.5]	Sensory Aspects of Design for User Experience
IDES 2300 [0.5]	Projects IIA
IDES 2302 [0.5]	Projects IIB
IDES 2600 [0.5]	Human Factors/Ergonomics in Design

3. 1.0 credit in free electives 1.0

Third Year

4. 2.0 credits in:	2.0
IDES 3310 [0.5]	Projects IIIA
IDES 3302 [0.5]	Projects IIIB
IDES 3502 [0.5]	Contextual Nature of Products
IDES 3601 [0.5]	Research for Design

5. 0.5 credit in: 0.5
BUSI 2204 [0.5] Basic Marketing

6. 1.0 credit in free electives at the 2000-level or above 1.0

7. 1.5 credits from: 1.5

IDES 3107 [0.5]	Design and Sustainability
IDES 3104 [0.5]	Exhibition Design
IDES 3105 [0.5]	Visual Communication and Package Design
IDES 3106 [0.5]	Advanced Computer Applications
IDES 3202 [0.5]	Advanced Studies in Form and Colour
IDES 3305 [0.5]	Special Studies
IDES 3306 [0.5]	Special Studies

Fourth Year

8. 3.5 credits in:	3.5
IDES 4001 [0.5]	Industrial Design Seminar
IDES 4002 [0.5]	Professional Practice
IDES 4301 [0.5]	Minor Projects
IDES 4310 [1.5]	Capstone Project
IDES 4400 [0.5]	Internship Field Report

9. 1.5 credits in free electives at the 3000-level or above 1.5

Total Credits 20.0

Notes:

1. Fourth-year students are required to register in IDES 4301 and IDES 4310 in the same academic year.
2. One successfully completed Industrial Design Co-op work term between the third and fourth year of study is equivalent to IDES 4400.
3. The electives chosen should serve to deepen the student's understanding of fields related to Industrial Design or disciplines that are relevant for industrial designers.

Minor in Design (4.0 credits)

This minor is open to all undergraduate degree students not in the Industrial Design program.

Only students pursuing undergraduate programs requiring at least 20.0 credits to graduate and who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to the Minor in Design.

1. 1.5 credits in: 1.5

IDES 1000 [0.5]	Theory and History of Design
IDES 1001 [0.5]	Industrial Design Analysis
IDES 2205 [0.5]	Sensory Aspects of Design for User Experience

2. 2.5 credits from: 2.5

IDES 2600 [0.5]	Human Factors/Ergonomics in Design
IDES 3104 [0.5]	Exhibition Design
IDES 3105 [0.5]	Visual Communication and Package Design
IDES 3107 [0.5]	Design and Sustainability
IDES 3305 [0.5]	Special Studies
IDES 3306 [0.5]	Special Studies
IDES 3502 [0.5]	Contextual Nature of Products
IDES 3601 [0.5]	Research for Design
IDES 4001 [0.5]	Industrial Design Seminar
IDES 4101 [0.5]	Adv. Studies in Manufacturing
IDES 4200 [0.5]	Form Organization
IDES 4305 [0.5]	Special Studies
IDES 4306 [0.5]	Special Studies

3. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Regulations

The regulations presented in this section apply to all students in the Bachelor of Industrial Design program.

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

Year Status and General Prerequisites

In the Bachelor of Industrial Design degree program, year status is defined as follows:

1st year: Admission to the program.

2nd year: Successful completion of IDES 1001 , IDES 1301 and must not be deficient in any more than one of the other first year courses.

3rd year: Successful completion of of IDES 2302 and all first and second year course requirements.

4th year: Successful completion of IDES 3302 and all third year course requirements.

Prerequisites

The following broad course prerequisites specify requirements for access to upper year project courses:

- Registration in IDES 2300 Projects IIA normally requires successful completion of IDES 1001, IDES 1301 and must not be deficient in any more than one of the other **first-year** courses.
- Registration in IDES 4310 [1.5] Capstone Project normally requires successful completion of all **third-year** course requirements.

Academic Continuation Evaluation for the Bachelor of Industrial Design

Students in the Bachelor of Industrial Design degree follow the standard Academic Continuation Evaluation (ACE) regulations (see Section 3.2 of the *Academic Regulations of the University*) with the following additions and amendments.

B.I.D. students are evaluated based on their Overall CGPA, and their performance in Industrial Design Core courses.

INDUSTRIAL DESIGN CORE COURSES

IDES 1300 [0.5]	Projects IA
IDES 1301 [0.5]	Projects IB
IDES 2300 [0.5]	Projects IIA
IDES 2302 [0.5]	Projects IIB
IDES 3302 [0.5]	Projects IIIB
IDES 3310 [0.5]	Projects IIIA
IDES 4301 [0.5]	Minor Projects

Students in the B.I.D. must achieve a minimum grade of C- in every Core course. If the student earns a grade less than C- in a Core course, they will be given permission to repeat the Core course only when their Overall CGPA meets the minimum required to be *Eligible to Continue* (EC), as described in Section 3.2.6 Minimum CGPA Requirements of the *Academic Regulations of the University*.

1. *Eligible to Continue* (EC) requires an Overall CGPA at or above the minimum requirements for the B.I.D. as described in Section 3.2.6 Minimum CGPA Requirements of the *Academic Regulations of the University*.
2. Students will be placed on *Academic Warning* (AW) when the Overall CGPA is lower than the minimum required for *Eligible to Continue* (EC).
3. Students must leave the Industrial Design program with the decision *Continue in Alternate* (CA) where any of the following conditions apply:
 - a. while on *Academic Warning* (AW), the student has failed to achieve the minimum required Term GPA

as described in Section 3.2.4.1 Term Grade Point Average;

- b. after a second attempt at a Core course, the student has not achieved a grade of at least C- in either attempt;
- c. the student has not completed the program within seven years.

See the *Academic Regulations of the University* section of the Calendar for additional information.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Industrial Design: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to:

1. Registered as a full-time student in the Industrial Design program
2. Obtained a CGPA of 8.00 or higher in industrial design core courses and an overall CGPA of 6.50 or higher

Students in the Bachelor of Industrial Design must complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: IDES 3999

Work-Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer	W	Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum

admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Industrial Design (B.I.D.)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and Physics. Calculus and Vectors, Design Technology, and Visual Arts are strongly recommended.

Candidates must present a portfolio of any kind of work that could demonstrate creativity and aptitude for the study of industrial design. Detailed information about the portfolio requirements can be found at admissions.carleton.ca. Attending an information session at the School is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits and on space availability in the program. Advanced standing will be granted only for those courses that are determined to be appropriate.

Applicants will also be required to complete a portfolio which will assist in the evaluation of their suitability for the program. Detailed information about the portfolio requirements can be found at admissions.carleton.ca.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Industrial Design program;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are

described in the Co-operative Education Regulations section of this Calendar.

Industrial Design (IDES) Courses

IDES 1000 [0.5 credit]

Theory and History of Design

The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes.

Also listed as ARCH 2006.

Lectures three hours a week.

IDES 1001 [0.5 credit]

Industrial Design Analysis

Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment.

Includes: Experiential Learning Activity

Also listed as ARCH 2101.

Prerequisite(s): IDES 1000 or ARCH 2006.

Lectures three hours a week.

IDES 1300 [0.5 credit]

Projects IA

An introduction to the skills and processes of industrial design including drawing and sketching as an aid to design, basics of line, shape, ideation, and visualization, product drawing, presentation techniques, basic model making, studio equipment and practices, introduction to the design process.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1000 (may be taken concurrently).

Studio and lectures six hours a week.

IDES 1301 [0.5 credit]

Projects IB

Aspects of industrial design theory and practice, specifically those dealing with principles of product development, fundamentals of form and colour and case studies. Students will explore the design process with emphasis on creative problem-solving techniques and visual communication in design.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1300.

Studio and lectures six hours a week.

IDES 2101 [0.5 credit]

Design for Manufacturing A

Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. Influences and role of assembly, finishing, production tooling, and costing.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1001, IDES 1301.

Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2102 [0.5 credit]

Design for Manufacturing B

Continuation of IDES 2101. Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. The influences and role of assembly, finishing, production tooling, costing are addressed.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2101 or permission of the School of Industrial Design.

Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2104 [0.5 credit]

Computer Applications A

Provides industrial design students with working knowledge of design related 2D computer applications, such as graphic manipulation, illustration software, and 2D Computer-Aided Design (CAD). Labs and projects are oriented towards building a foundation in software and group work skills for studio courses.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301.

Lecture and tutorials three hours a week.

IDES 2105 [0.5 credit]

Computer Applications B

Provides industrial design students with working knowledge of design related 3D computer applications, such as surface and solids modelling CAD software. Labs and projects are oriented towards building a foundation in software and group work skills for studio courses.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301.

Lecture and tutorials three hours a week.

IDES 2205 [0.5 credit]

Sensory Aspects of Design for User Experience

An exploration of multi-sensory qualities derived from and designed into products to optimize product-interaction experiences. Visual, tactile, auditory, and other related sensory aspects of design and design principles that contribute to the product multi-sensory characteristics while adding meaning and emotional value.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 2203 (no longer offered).

Prerequisite(s): IDES 1001 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 2300 [0.5 credit]**Projects IIA**

Principles of design sketching used in the industrial design process. Topics include: sketching as a tool for problem definition; idea exploration and form development; rendering techniques and the communication of design concepts; basic physical prototyping and modeling-making techniques.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1001 and IDES 1301, or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 2302 [0.5 credit]**Projects IIB**

Introduction to the design principles associated with adapting products to an existing product semantic.

Topics covered: principles of design, product semantics, design analysis, design synthesis, design evaluation, and modeling techniques. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2300 or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 2600 [0.5 credit]**Human Factors/Ergonomics in Design**

Foundation course in human factors/ergonomics providing an overview of physical and cognitive considerations in product design and related design fields. Anthropometrics, biomechanical considerations, cognition, social interaction, and emotional interaction are introduced in relation to supporting user experience, health and safety, performance and productivity.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures and discussion three hours a week.

IDES 3104 [0.5 credit]**Exhibition Design**

Exhibition design is explored through lectures, case studies, field trips and guest lectures. Students participate in exercises and apply design skills to a variety of exhibition design realms. Introduces students to the potential of the built environment for exploring a range of diverse exhibit applications.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 3105 [0.5 credit]**Visual Communication and Package Design**

A survey of visual communication and package design principles relevant to industrial designers. Product/brand definition and corporate identity through package design.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 3106 [0.5 credit]**Advanced Computer Applications**

Examination of complex product geometry utilizing 3D computer applications. Topics include spline, surface and solids construction, surface verification tools, and rendering tools and techniques. Workflow, robust design, reverse design techniques and 3D printing will be explored through exercises.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2105.

Lecture and tutorials three hours a week.

IDES 3107 [0.5 credit]**Design and Sustainability**

Explores the industrial designer's role in creating more environmentally and socially responsible products.

Addresses imperatives and drivers for integrating sustainability into products. Includes: sustainable design strategies, strategies and tools, sustainable design business case, circular economy model for designed products, and case studies.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 3202 [0.5 credit]**Advanced Studies in Form and Colour**

Students may continue the research and study encountered in IDES 2205, IDES 2300 and IDES 2302 by doing advanced research in the phenomena of form and/or colour and their communicative functions in products. Directed Study.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Lecture and tutorials three hours a week.

IDES 3302 [0.5 credit]**Projects IIIB**

Introduction to the principles of innovation as found in industrial design. Invention, innovation, entrepreneurship, basic mechanisms. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 3301 (no longer offered).

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 3305 [0.5 credit]**Special Studies**

Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 3306 [0.5 credit]**Special Studies**

Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 3310 [0.5 credit]**Projects IIIA**

Introduction to the design principles associated with the evaluation and re-design of an existing product. Topics include: user/machine relationship, component packaging, and manufacturability. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 3300 (no longer offered).

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Studio and lectures twelve hours a week.

IDES 3502 [0.5 credit]**Contextual Nature of Products**

Cultural subjects which have an influence on contemporary industrial design. The perspective of the course is anthropological: the context and cultural relevance of industrial design.

Prerequisite(s): IDES 1000 (ARCH 2006).

Lectures and tutorials three hours a week.

IDES 3601 [0.5 credit]**Research for Design**

Basic design research techniques to foster design exploration. Methods focus on understanding context and user experience to produce meaningful, actionable insights and design opportunities. Processes include qualitative and quantitative research, as well as creative and evaluative research with people. Teamwork and collaboration are explored.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2600.

Lectures or laboratory three hours a week.

IDES 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

IDES 4001 [0.5 credit]**Industrial Design Seminar**

Topics vary yearly and address key contemporary industrial design issues. There is a focus on writing, discussion, and debate. Students organize a seminar with design professionals and other community experts including student and professional presentations, interaction, and discussion.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Seminar three hours a week.

IDES 4002 [0.5 credit]**Professional Practice**

The organizational aspects of consultancies and client responsibilities within the framework of corporate management. Topics include: the form of contracts for consultancy, determination of fees, legal implications, patents and copyrights. Guest lecturers.

Precludes additional credit for IDES 3503 (no longer offered).

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Lectures and discussion three hours a week.

IDES 4101 [0.5 credit]**Adv. Studies in Manufacturing**

Advanced manufacturing concepts and workflows are examined through a series of workshops and minor projects utilizing state-of-the-art equipment.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2101 and IDES 2102.

Lectures or laboratory three hours a week.

IDES 4200 [0.5 credit]**Form Organization**

Using form organization as a tool to design, the definition and prescription of monolithic solids by means of an abstract system; making and verifying materialized approximations of such solids.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2300 and IDES 2302 or permission of the School of Industrial Design.

Lectures, tutorials and laboratory six hours a week.

IDES 4301 [0.5 credit]**Minor Projects**

Advanced skills-based course that enhances student experience in novel, experimental processes and techniques in design. Workshop-style activities and short projects focus on increasing skill competence and versatility in a variety of fields. Emphasis on time management and the ability to work independently.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 4305 [0.5 credit]

Special Studies

Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 4306 [0.5 credit]

Special Studies

Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 4310 [1.5 credit]

Capstone Project

Application of design principles in a comprehensive design project. Problem area should be product-oriented and of sufficient complexity. Normally undertaken in consultation with off-campus organizations and/or industry. Supervised by faculty and/or sessional members.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 4300 (no longer offered).

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Studio and lectures six hours a week in Fall and twelve hours a week in Winter.

IDES 4400 [0.5 credit]

Internship Field Report

Work experience related to industrial design. Following the internship period, normally 12 weeks, a comprehensive report describing observations and insights will be submitted. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Tutorial hours arranged.

Information Technology

This section presents the requirements for programs in:

- Information Resource Management B.I.T.
- Interactive Multimedia and Design B.I.T.
- Interactive Multimedia and Design Animation & Visual Effects Stream B.I.T.
- Interactive Multimedia and Design Game Design/ Development Stream B.I.T.
- Interactive Multimedia and Design Web & User Interfaces Stream B.I.T.

- Network Technology B.I.T.
- Optical Systems and Sensors B.I.T.

Program Requirements

Course Categories

- Carleton University Electives
- Algonquin college Electives

Please check the current lists of approved electives on the program web site.

Information Resource Management

B.I.T. (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 2.5 credits in:	2.5
BIT 1400 [0.5]	Introduction to Programming and Problem Solving
IRM 1002 [0.5]	Reference and Information Services
IRM 1005 [0.5]	Web Interface Development
IRM 1006 [0.5]	Subject Analysis and Indexing
IRM 1007 [0.5]	Cataloguing
2. 3.0 credits in:	3.0
BIT 2008 [0.5]	Multimedia Data Management
BIT 2400 [0.5]	Intermediate Programming
IRM 2002 [0.5]	Legal and Business Information
IRM 2003 [0.5]	Classification
IRM 2004 [0.5]	Information Management and Digital Preservation
IRM 2005 [0.5]	Advanced Cataloguing
3. 2.5 credits in:	2.5
IRM 3001 [0.5]	Scientific and Medical Information
IRM 3003 [0.5]	Legal Issues in Information Resource Management
IRM 3006 [0.5]	Data Analysis and Research Methodology
IRM 3007 [0.5]	Practicum for IRM
IRM 3008 [0.5]	Metadata for IRM
4. 2.0 credits in:	2.0
IRM 4000 [0.5]	Library Software
IRM 4004 [0.5]	Applied Big Data
IRM 4900 [1.0]	IRM Capstone Project
B. Credits Not Included in the Major (10.0 credits)	
5. 1.5 credits in:	1.5
IRM 1003 [0.5]	Collections management
IRM 1004 [0.5]	Reader's Advisory Services
IRM 1008 [0.5]	Introduction to Information Resource Management
6. 1.5 credits in:	1.5
BIT 2001 [0.5]	Introduction to Business
BIT 2002 [0.5]	Marketing in the IT sector
BIT 2009 [0.5]	Statistics for Technology
7. 1.0 credit in:	1.0
CCDP 3006 [0.5]	Communication Skills for IRM
IRM 3004 [0.5]	Project management
8. 1.0 credit in:	1.0
IRM 4001 [0.5]	Archives and Special Collections
IRM 4002 [0.5]	Network Technology
9. 1.0 credit in French Language (see Note 2, below)	1.0

10. 4.0 credits in electives to be fulfilled by courses taken to complete a Minor (see Note 1, below) 4.0

Total Credits 20.0

Notes:

- 1. Additional requirements:** students must complete a Minor in another academic discipline.
- 2. Language requirement:** all students are expected to improve their current French language skill by one credit. Should a student be assessed as fluently bilingual, 1.0 credit of alternate language courses will be accepted. Canadian Aboriginal languages would be encouraged in such cases.

**Interactive Multimedia and Design
B.I.T. (20.0 credits)**

A. Credits Included in the Major CGPA (11.0 credits)

1. 2.0 credits in: 2.0

IMD 1001 [0.5]	Visual Communication
IMD 1002 [0.5]	Visual Dynamics
IMD 1004 [0.5]	Design Processes
IMD 1005 [0.5]	Web Development

2. 3.0 credits in: 3.0

BIT 2008 [0.5]	Multimedia Data Management
BIT 2400 [0.5]	Intermediate Programming
IMD 2003 [0.5]	Audio and Video
IMD 2007 [0.5]	Intro to 3D Animation
IMD 2900 [1.0]	Design Studio 1

3. 3.0 credits in: 3.0

IMD 3004 [0.5]	Human Computer Interaction and Design
IMD 3005 [0.5]	Sensor-Based Interaction
IMD 3900 [1.0]	Design Studio 2
IMD 3901 [1.0]	Design Studio 3

4. 1.5 credits from: 1.5

IMD 4006 [0.5]	Advanced Game Design and Development
IMD 4008 [0.5]	Mobile User Interface Design and Development
ITEC 4007 [0.5]	Dynamics and Physics-Based Animation
ITEC 4009 [0.5]	Rigging and Advanced Character Animation
ITEC 4010 [0.5]	Visual Effects and Compositing
ITEC 4011 [0.5]	Artificial Intelligence for Digital Media
ITEC 4012 [0.5]	Web Application Frameworks
ITEC 4014 [0.5]	User Experience Design and Accessibility

5. 1.5 credits in: 1.5

IMD 4901 [1.5]	IMD Capstone Project
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B. Credits Not Included in the Major CGPA (9.0 credits)

6. 2.5 credits in: 2.5

BIT 1002 [0.5]	Physics for Information Technology I
BIT 1100 [0.5]	Mathematics I for IMD
BIT 1101 [0.5]	Mathematics II for IMD
BIT 1400 [0.5]	Introduction to Programming and Problem Solving

IMD 1000 [0.5] Introduction to Interactive Multimedia Design

7. 2.0 credits in: 2.0

BIT 2002 [0.5]	Marketing in the IT sector
BIT 2006 [0.5]	Elective
BIT 2009 [0.5]	Statistics for Technology
IMD 2006 [0.5]	Introduction to Game Design and Development

8. 1.5 credits in: 1.5

CCDP 3003 [0.5]	Communication Skills for IMD
IMD 3002 [0.5]	3D Computer Graphics
IMD 3006 [0.5]	Software Design for Multimedia Applications

9. 0.5 credit in: 0.5

IMD 4002 [0.5]	Technology and Culture
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10. 1.0 credit in Arts and Humanities elective outside the faculties of Business, Science and Engineering. 1.0

11. 1.5 credits in electives for IMD, Directed Studies, or courses listed in but not used to fulfill Item 4 above: 1.5

BIT 4000 [0.5]	Directed Studies
IRM 4002 [0.5]	Network Technology
ITEC 3100 [0.5]	Immersive Storytelling
ITEC 4015 [0.5]	Digital Audio and Music
ITEC 4016 [0.5]	Virtual and Augmented Reality
ITEC 4017 [0.5]	Photo and Non-Photo-Realistic Rendering
ITEC 4018 [0.5]	GPU Programming and Real-Time Rendering
ITEC 4019 [0.5]	Directing and Cinematography for Digital Storytelling
ITEC 4020 [0.5]	Environment and Architectural Modelling

Total Credits 20.0

**Interactive Multimedia and Design
Animation & Visual Effects Stream
B.I.T. (20.0 credits)**

This stream is open to students in the Interactive Multimedia and Design B.I.T. program with 4th year standing.

A. Credits Included in the Major CGPA (11.0 credits)

1. 2.0 credits in: 2.0

IMD 1001 [0.5]	Visual Communication
IMD 1002 [0.5]	Visual Dynamics
IMD 1004 [0.5]	Design Processes
IMD 1005 [0.5]	Web Development

2. 3.0 credits in: 3.0

BIT 2008 [0.5]	Multimedia Data Management
BIT 2400 [0.5]	Intermediate Programming
IMD 2003 [0.5]	Audio and Video
IMD 2007 [0.5]	Intro to 3D Animation
IMD 2900 [1.0]	Design Studio 1

3. 3.0 credits in: 3.0

IMD 3004 [0.5]	Human Computer Interaction and Design
IMD 3005 [0.5]	Sensor-Based Interaction
IMD 3900 [1.0]	Design Studio 2
IMD 3901 [1.0]	Design Studio 3

4. 1.5 credits in:		1.5
ITEC 4007 [0.5]	Dynamics and Physics-Based Animation	
ITEC 4009 [0.5]	Rigging and Advanced Character Animation	
ITEC 4010 [0.5]	Visual Effects and Compositing	
5. 1.5 credits in:		1.5
IMD 4901 [1.5]	IMD Capstone Project (1.5)	
B. Credits Not Included in the Major CGPA (9.0 credits)		
6. 2.5 credits in:		2.5
BIT 1002 [0.5]	Physics for Information Technology I	
BIT 1100 [0.5]	Mathematics I for IMD	
BIT 1101 [0.5]	Mathematics II for IMD	
BIT 1400 [0.5]	Introduction to Programming and Problem Solving	
IMD 1000 [0.5]	Introduction to Interactive Multimedia Design	
7. 2.0 credits in:		2.0
BIT 2002 [0.5]	Marketing in the IT sector	
BIT 2006 [0.5]	Elective	
BIT 2009 [0.5]	Statistics for Technology	
IMD 2006 [0.5]	Introduction to Game Design and Development	
8. 1.5 credits in:		1.5
CCDP 3003 [0.5]	Communication Skills for IMD	
IMD 3002 [0.5]	3D Computer Graphics	
IMD 3006 [0.5]	Software Design for Multimedia Applications	
9. 0.5 credit in:		0.5
IMD 4002 [0.5]	Technology and Culture	
10. 1.0 credit in	Arts and Humanities elective outside the faculties of Business, Science and Engineering.	1.0
11. 1.5 credit in	electives for IMD, and/or Directed Studies	1.5
BIT 4000 [0.5]	Directed Studies	
IMD 4006 [0.5]	Advanced Game Design and Development	
IMD 4008 [0.5]	Mobile User Interface Design and Development	
IRM 4002 [0.5]	Network Technology	
ITEC 3100 [0.5]	Immersive Storytelling	
ITEC 4011 [0.5]	Artificial Intelligence for Digital Media	
ITEC 4012 [0.5]	Web Application Frameworks	
ITEC 4014 [0.5]	User Experience Design and Accessibility	
ITEC 4015 [0.5]	Digital Audio and Music	
ITEC 4016 [0.5]	Virtual and Augmented Reality	
ITEC 4017 [0.5]	Photo and Non-Photo-Realistic Rendering	
ITEC 4018 [0.5]	GPU Programming and Real-Time Rendering	
ITEC 4019 [0.5]	Directing and Cinematography for Digital Storytelling	
ITEC 4020 [0.5]	Environment and Architectural Modelling	
Total Credits		20.0

Interactive Multimedia and Design Game Design/Development Stream B.I.T. (20.0 credits)

This stream is open to students in the Interactive Multimedia and Design B.I.T. program with 4th year standing.

A. Credits Included in the Major CGPA (11.0 credits)

1. 2.0 credits in:		2.0
IMD 1001 [0.5]	Visual Communication	
IMD 1002 [0.5]	Visual Dynamics	
IMD 1004 [0.5]	Design Processes	
IMD 1005 [0.5]	Web Development	
2. 3.0 credits in:		3.0
BIT 2008 [0.5]	Multimedia Data Management	
BIT 2400 [0.5]	Intermediate Programming	
IMD 2003 [0.5]	Audio and Video	
IMD 2007 [0.5]	Intro to 3D Animation	
IMD 2900 [1.0]	Design Studio 1	
3. 3.0 credits in:		3.0
IMD 3004 [0.5]	Human Computer Interaction and Design	
IMD 3005 [0.5]	Sensor-Based Interaction	
IMD 3900 [1.0]	Design Studio 2	
IMD 3901 [1.0]	Design Studio 3	
4. 1.5 credits in:		1.5
IMD 4006 [0.5]	Advanced Game Design and Development	
ITEC 4009 [0.5]	Rigging and Advanced Character Animation	
ITEC 4011 [0.5]	Artificial Intelligence for Digital Media	
5. 1.5 credits in:		1.5
IMD 4901 [1.5]	IMD Capstone Project (1.5)	
B. Credits Not Included in the Major CGPA (9.0 credits)		
6. 2.5 credits in:		2.5
BIT 1002 [0.5]	Physics for Information Technology I	
BIT 1100 [0.5]	Mathematics I for IMD	
BIT 1101 [0.5]	Mathematics II for IMD	
BIT 1400 [0.5]	Introduction to Programming and Problem Solving	
IMD 1000 [0.5]	Introduction to Interactive Multimedia Design	
7. 2.0 credits in:		2.0
BIT 2002 [0.5]	Marketing in the IT sector	
BIT 2006 [0.5]	Elective	
BIT 2009 [0.5]	Statistics for Technology	
IMD 2006 [0.5]	Introduction to Game Design and Development	
8. 1.5 credits in:		1.5
CCDP 3003 [0.5]	Communication Skills for IMD	
IMD 3002 [0.5]	3D Computer Graphics	
IMD 3006 [0.5]	Software Design for Multimedia Applications	
9. 0.5 credit in:		0.5
IMD 4002 [0.5]	Technology and Culture	
10. 1.0 credit in	Arts and Humanities elective outside the faculties of Business, Science and Engineering.	1.0

11. 1.5 credit in electives for IMD, and/or Directed Studies 1.5

BIT 4000 [0.5]	Directed Studies
IMD 4008 [0.5]	Mobile User Interface Design and Development
IRM 4002 [0.5]	Network Technology
ITEC 3100 [0.5]	Immersive Storytelling
ITEC 4007 [0.5]	Dynamics and Physics-Based Animation
ITEC 4010 [0.5]	Visual Effects and Compositing
ITEC 4012 [0.5]	Web Application Frameworks
ITEC 4014 [0.5]	User Experience Design and Accessibility
ITEC 4015 [0.5]	Digital Audio and Music
ITEC 4016 [0.5]	Virtual and Augmented Reality
ITEC 4017 [0.5]	Photo and Non-Photo-Realistic Rendering
ITEC 4018 [0.5]	GPU Programming and Real-Time Rendering
ITEC 4019 [0.5]	Directing and Cinematography for Digital Storytelling
ITEC 4020 [0.5]	Environment and Architectural Modelling

Total Credits 20.0

Interactive Multimedia and Design Web & User Interfaces Stream B.I.T. (20.0 credits)

This stream is open to students in the Interactive Multimedia and Design B.I.T. program with 4th year standing.

A. Credits Included in the Major CGPA (11.0 credits)

1. 2.0 credits in: 2.0

IMD 1001 [0.5]	Visual Communication
IMD 1002 [0.5]	Visual Dynamics
IMD 1004 [0.5]	Design Processes
IMD 1005 [0.5]	Web Development

2. 3.0 credits in: 3.0

BIT 2008 [0.5]	Multimedia Data Management
BIT 2400 [0.5]	Intermediate Programming
IMD 2003 [0.5]	Audio and Video
IMD 2007 [0.5]	Intro to 3D Animation
IMD 2900 [1.0]	Design Studio 1

3. 3.0 credits in: 3.0

IMD 3004 [0.5]	Human Computer Interaction and Design
IMD 3005 [0.5]	Sensor-Based Interaction
IMD 3900 [1.0]	Design Studio 2
IMD 3901 [1.0]	Design Studio 3

4. 1.5 credits in: 1.5

IMD 4008 [0.5]	Mobile User Interface Design and Development
ITEC 4012 [0.5]	Web Application Frameworks
ITEC 4014 [0.5]	User Experience Design and Accessibility

5. 1.5 credits in: 1.5

IMD 4901 [1.5]	IMD Capstone Project (1.5)
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B. Credits Not Included in the Major CGPA (9.0 credits)

6. 2.5 credits in: 2.5

BIT 1002 [0.5]	Physics for Information Technology I
BIT 1100 [0.5]	Mathematics I for IMD
BIT 1101 [0.5]	Mathematics II for IMD
BIT 1400 [0.5]	Introduction to Programming and Problem Solving
IMD 1000 [0.5]	Introduction to Interactive Multimedia Design

7. 2.0 credits in: 2.0

BIT 2002 [0.5]	Marketing in the IT sector
BIT 2006 [0.5]	Elective
BIT 2009 [0.5]	Statistics for Technology
IMD 2006 [0.5]	Introduction to Game Design and Development

8. 1.5 credits in: 1.5

CCDP 3003 [0.5]	Communication Skills for IMD
IMD 3002 [0.5]	3D Computer Graphics
IMD 3006 [0.5]	Software Design for Multimedia Applications

9. 0.5 credit in: 0.5

IMD 4002 [0.5]	Technology and Culture
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10. 1.0 credit in Arts and Humanities elective outside the faculties of Business, Science and Engineering. 1.0

11. 1.5 credits in electives for IMD, and/or Directed Studies 1.5

BIT 4000 [0.5]	Directed Studies
IMD 4006 [0.5]	Advanced Game Design and Development
IRM 4002 [0.5]	Network Technology
ITEC 3100 [0.5]	Immersive Storytelling
ITEC 4007 [0.5]	Dynamics and Physics-Based Animation
ITEC 4009 [0.5]	Rigging and Advanced Character Animation
ITEC 4010 [0.5]	Visual Effects and Compositing
ITEC 4011 [0.5]	Artificial Intelligence for Digital Media
ITEC 4015 [0.5]	Digital Audio and Music
ITEC 4016 [0.5]	Virtual and Augmented Reality
ITEC 4017 [0.5]	Photo and Non-Photo-Realistic Rendering
ITEC 4018 [0.5]	GPU Programming and Real-Time Rendering
ITEC 4019 [0.5]	Directing and Cinematography for Digital Storytelling
ITEC 4020 [0.5]	Environment and Architectural Modelling

Total Credits 20.0

Retention of Work (Interactive Multimedia and Design Program Only)

A portfolio represents a record of the student's progress and design experience over the years, and is an indispensable requirement for any future job application. A portfolio is started in first year and continues to expand until graduation. The School, therefore, requires that each student produce reproductions (on a digital storage device, e.g. flash drive) of their work at the end of each term. One copy of the work should be put in the student's portfolio

and the other turned in to the instructor for retention in the School's archives. (This facilitates retrospective exhibitions of work, accreditation, publications and any future references for pedagogic purposes.) Original work is the property of the students, but the School retains the right to keep work of merit for up to four years after the date of submission. The School will make every effort to preserve the work in good condition, and will give authorship credit and take care of its proper use.

Network Technology

B.I.T. (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 0.5 credit in:		0.5
NET 1006 [0.5]	Routing and Switching	
2. 2.5 credits in:		2.5
BIT 2400 [0.5]	Intermediate Programming	
NET 2000 [0.5]	Intermediate Networking	
NET 2008 [0.5]	DevOps	
NET 2011 [0.5]	Desktop and Server Environments II	
NET 2012 [0.5]	Networking Technologies and Automation	
3. 3.0 credits in:		3.0
NET 3006 [0.5]	Network Management and Measurements	
NET 3007 [0.5]	Network Security	
NET 3008 [0.5]	Advanced Network Routing	
NET 3011 [0.5]	Advanced Network Switching	
NET 3012 [0.5]	IP Architectures and Solutions	
NET 3900 [0.5]	Wireless Networks	
4. 4.0 credits in:		4.0
NET 4001 [0.5]	Network Simulation	
NET 4005 [0.5]	Networked Applications	
NET 4007 [0.5]	Multimedia Networking	
NET 4009 [0.5]	Troubleshooting IP Networks	
NET 4010 [0.5]	Secure Mobile Networking	
NET 4011 [0.5]	Advanced Topics in Network Security	
NET 4901 [1.0]	NET Capstone Project	

B. Credits Not Included in the Major CGPA (10.0 credits)

5. 3.5 credits in:		3.5
BIT 1000 [0.5]	Mathematics I for NET	
BIT 1001 [0.5]	Mathematics II for NET	
BIT 1006 [0.5]	Achieving Success in Changing Environments	
BIT 1007 [0.5]	Physics for NET	
BIT 1400 [0.5]	Introduction to Programming and Problem Solving	
NET 1001 [0.5]	Computer Technology Basics	
NET 1002 [0.5]	Networking Fundamentals	
6. 3.0 credits in:		3.0
BIT 2000 [0.5]	Introduction to Statistics	
BIT 2001 [0.5]	Introduction to Business	
CCDP 2004 [0.5]	Communication Skills for NET	
NET 2007 [0.5]	Basics of Transmission Systems	
NET 2010 [0.5]	Desktop and Server Environments I	

NET 2013 [0.5]	Computer Systems Foundations (0.5)	
7. 2.0 credits in:		2.0
NET 3000 [0.5]	Database Concepts and SQL	
NET 3001 [0.5]	Real-time Systems	
NET 3004 [0.5]	Data Structures	
NET 3010 [0.5]	Web Programming	
8. 1.0 credit in:		1.0
NET 4000 [0.5]	Emerging Network Technologies	
NET 4003 [0.5]	Computer Systems Architecture	
9. 0.5 credit in Arts and Humanities electives outside the faculties of Business, Science and Engineering.		0.5
Total Credits		20.0

Optical Systems and Sensors

B.I.T. (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 0.5 credits in:		0.5
OSS 1003 [0.5]	Optics/Optical Fibers (Principles)	
2. 2.5 credits in:		2.5
BIT 2400 [0.5]	Intermediate Programming	
OSS 2001 [0.5]	Fundamentals of Light Sources	
OSS 2002 [0.5]	Optical Communication Networks I	
OSS 2003 [0.5]	Laser Systems	
OSS 2008 [0.5]	Manufacturing Photonics Components	
3. 2.5 credits in:		2.5
OSS 3000 [0.5]	Optical Communication Networks II	
OSS 3002 [0.5]	Design of Optical Components and Systems (0.5)	
OSS 3003 [0.5]	Fundamentals of Electromagnetics	
OSS 3013 [0.5]	Software Design for Optical Systems and Sensors	
OSS 3014 [0.5]	Optical Waves, Waveguides, and Sensors	
4. 3.5 credits in:		3.5
OSS 4001 [0.5]	Optoelectronic Devices	
OSS 4004 [0.5]	Medical Imaging and Biosensors	
OSS 4006 [0.5]	Image Processing	
OSS 4008 [0.5]	Remote Sensing	
OSS 4009 [0.5]	Computer Vision	
OSS 4900 [1.0]	OSS Capstone Project	

B. Credits Not Included in the Major CGPA (11.0 credits)

5. 4.0 credits in:		4.0
BIT 1200 [0.5]	Calculus	
BIT 1201 [0.5]	Linear Algebra	
BIT 1203 [0.5]	Newtonian Physics	
BIT 1204 [0.5]	Electromagnetism & Modern Physics	
BIT 1400 [0.5]	Introduction to Programming and Problem Solving	
OSS 1002 [0.5]	Applications in Photonics & Optoelectronics	
OSS 1005 [0.5]	Introduction to Optics	
OSS 1006 [0.5]	Introduction to Automation and Simulation	
6. 4.0 credits in:		4.0
BIT 2000 [0.5]	Introduction to Statistics	

BIT 2001 [0.5]	Introduction to Business	
BIT 2002 [0.5]	Marketing in the IT sector	
BIT 2010 [0.5]	Differential Equations & Multivariate Calculus	
OSS 2005 [0.5]	Circuits and Signals	
OSS 2006 [0.5]	Integrated Circuits	
OSS 2009 [0.5]	Assembly and Machine Language	
OSS 2010 [0.5]	Signals and Systems	
7. 2.5 credits in:		2.5
CCDP 3008 [0.5]	Communication Skills for OSS	
OSS 3001 [0.5]	Real-time Systems	
OSS 3004 [0.5]	Data Structures	
OSS 3009 [0.5]	Project Management	
OSS 3012 [0.5]	Digital Signal Processing	
8. 0.5 credit in Arts and Humanities elective outside the faculties of Business, Science and Engineering.		0.5
Total Credits		20.0

Regulations

The regulations presented in this section apply to all students in the Bachelor of Information Technology program.

In addition to the program requirements, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

Joint Status

A student registered in the BIT degree has student status at both Algonquin College and Carleton University. At Algonquin College the student is considered to be a post-secondary student; at Carleton University, the student is considered to be a degree student. Students registered in the BIT degree have access to all student services on the Carleton University campus and selected services on the Algonquin College campus.

Academic Regulations

The academic regulations governing the B.I.T. are the academic regulations of Carleton University. These regulations are defined in full in the Academic Regulations of the University section of this Calendar and apply to B.I.T. students on both campuses. Within the context of these regulations, B.I.T. is considered to be a non-honours degree, with a defined Major CGPA, and requires 20.0 credits. Courses with the designations BIT, NET or IMD are not normally transferable to Engineering, Computer Science, or other programs at Carleton University.

Students should note that there are significant differences between the academic regulations of Carleton University and Algonquin College, it is the regulations of Carleton University that apply in all cases as related both to course registrations and program rules.

At Carleton University, the chief examination officer of the BIT is the Dean of Engineering and Design. At Algonquin College, grades are approved by the Dean of the respective School.

Graduation

In order to graduate with the Bachelor of Information Technology Degree and the Advanced Diploma of Technology or Advanced Diploma of Applied Arts, the student must:

1. satisfy all requirements for the program of study;
2. be recommended for graduation by Bachelor of Information Technology Academic Council;
3. be approved for graduation by the Senate of Carleton University;
4. be approved for graduation by the Registrar of Algonquin College.

Discipline

The regulations, procedures and sanctions that apply to student discipline on either campus, both concerning Instructional Offences and Offences of Conduct are those of Carleton University and are described in the Carleton University Undergraduate Calendar. However, while students are on Algonquin's campus, they are expected to follow Algonquin's Directives regarding Student Misconduct and Use of Electronic Devices.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Information Technology: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Obtained and maintained a major CGPA of 8.0;
2. Successfully completed all required first-year courses, and
3. Registered as a full-time student in the Bachelor of Information Technology program

Students in the Bachelor of Information Technology must complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: BIT 3999

Work/Study Pattern:

Interactive Multimedia and Design, Information Resource management, Network Technology, Photonics and Laser Technology

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	W	Winter	S	Winter	S
Summer		Summer	W	Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places

available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Information Technology (B.I.T.)

The Bachelor of Information Technology is offered jointly with Algonquin College.

Admission Requirements

First Year

To be eligible for admission to the first year of the Bachelor of Information Technology, the applicant must have the Ontario Secondary School Diploma (OSSD) or equivalent, including a minimum of six 4U or M courses.

For Information Resource Management: the six 4U or M courses must include English and one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

For Interactive Multimedia and Design: the six 4U or M courses must include Advanced Functions. In addition, candidates for BIT in Interactive Multimedia and Design must submit a portfolio of any kind of work that demonstrates the applicant's creativity and aptitude in design work. Detailed information about the portfolio requirements can be found at admissions.carleton.ca

For Network Technology: the six 4U or M courses must include one of Advanced Functions or Calculus and Vectors or Mathematics of Data Management (Calculus and Vectors recommended).

For Optical Systems & Sensors: the six 4U or M courses must include Advanced Functions.

Advanced Standing

Applications for advanced standing towards the program leading to the Bachelor of Information Technology degree will be evaluated on an individual basis upon admission to the program. Students may request that additional courses be considered for advanced standing. Such requests may be made only once, and must be received by the BIT Joint Council (comprised of instructors from Carleton University and Algonquin College) by August 30 of the year in which the student is admitted to the program. Requests must follow the submission format outlined on the BIT web site.

Only university- and college-level courses in which a student has achieved a grade of C- or higher are eligible to be considered for Advanced Standing.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in one of the programs of the Information Technology degree stated in this section;
3. be eligible for work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the Co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Information Resource Management (IRM) Courses

IRM 1002 [0.5 credit]

Reference and Information Services

Introduction to the theory and techniques needed to conduct reference interviews and interpret reference queries. Students learn to select and use general reference sources such as dictionaries, encyclopedias, directories, bibliographies, periodical indexes, almanacs, and handbooks in print, and electronic formats.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1003 [0.5 credit]

Collections management

Introduction to the principals of collections management including techniques and procedures for selecting, ordering and receiving library materials, accounting, collection development and automated acquisitions.

Students also learn policies and procedures required for circulation, document delivery and interlibrary loans.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1004 [0.5 credit]

Reader's Advisory Services

Students become familiar with fiction and non-fiction materials available to various categories of clients and learn how to market them. In addition, students further develop through various assignments their researching, writing, speaking, listening and communication skills.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 1005 [0.5 credit]

Web Interface Development

Combining graphics, text, audio and video to develop websites on an individual basis and in groups, using latest versions of HyperText Markup Language(HTML), Cascading Style Sheets (CSS), JavaScript and data interchange formats such as Extensible Markup Language(XML) and JavaScript Object Notation(JSON).

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

IRM 1006 [0.5 credit]

Subject Analysis and Indexing

Students learn the basic theory of subject analysis and indexing methods used to provide access to library materials and literature. Practical instruction makes use of thesauri, as well as standard subject heading lists, such as Sears and Library of Congress.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hour a week.

IRM 1007 [0.5 credit]

Cataloguing

The catalogue is the main finding aid to the collection of the library. Students learn the basic principles and concepts of international standards used to describe library materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 1001 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1008 [0.5 credit]

Introduction to Information Resource Management

Students develop understanding of the concepts of information retrieval, creation, evaluation, organization and client service. Knowledge of legal and ethical implications of information and current trends in the field is studied.

Through in-class lectures and hands-on activities, students gain an overview of the field.

Precludes additional credit for IRM 1000 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 2002 [0.5 credit]**Legal and Business Information**

Students develop skills in planning and executing information searches and evaluating print and electronic resources. Students learn to locate information on selected topics, compile subject-specific annotated bibliographies and instruct library clients in the use of specialized materials and databases.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 1002.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 2003 [0.5 credit]**Classification**

How to interpret and apply Dewey Decimal and Library of Congress Classification systems. Also includes analysis of the subject content of materials, building notation, using tables, shelf-listing techniques and creating unique book numbers.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 1006.

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2004 [0.5 credit]**Information Management and Digital Preservation**

Essentials of information management in an organization including the life cycle management of files in paper and the electronic environment. This course will also cover contemporary issues in information management and digital preservation.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 1008.

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2005 [0.5 credit]**Advanced Cataloguing**

Libraries purchase and provide access to a wide variety of print and electronic resources. Building on work done in IRM 1007, students learn to interpret international cataloguing standards to describe more complex materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 2001.

Prerequisite(s): IRM 1007.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3001 [0.5 credit]**Scientific and Medical Information**

Students enhance their knowledge of print and electronic reference sources in science and technology. Students learn to compile specialized subject-specific bibliographies and assignments provide training in the use of science and technology reference sources.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 2002.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3003 [0.5 credit]**Legal Issues in Information Resource Management**

In-depth analysis and assessment of copyright and other forms of intellectual property. Legal issues related to information technology. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, Charter and human rights issues, and security.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 3004 [0.5 credit]**Project management**

Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of information management using case studies.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in the Information resource management program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3006 [0.5 credit]**Data Analysis and Research Methodology**

Introduction to the logic and design of research. Qualitative and quantitative research methodology with emphasis on the application and interpretation of statistical techniques for data analysis. May include, but are not limited to, bivariate and multivariate analysis, distribution analysis, visual data analysis, market basket analysis.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 3002 (no longer offered).

Prerequisite(s): BIT 2009 or equivalent.

Lectures three hours a week.

IRM 3007 [0.5 credit]**Practicum for IRM**

Students will design and complete a project related to information management under the supervision of a faculty member or librarian. This course provides the opportunity to apply knowledge gained in previous courses.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Information resource management program.

Tutorial/laboratory eight hours a week.

IRM 3008 [0.5 credit]**Metadata for IRM**

Students develop an understanding of key metadata schema and apply standards to describe range of digital resources. The metadata schemes include focus on Dublin Core (DC) and MODS with select coverage of specialist schema. Through in-class lectures and hands-on activities, students apply metadata schemes.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 3000 (no longer offered).

Prerequisite(s): IRM 2005.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 4000 [0.5 credit]**Library Software**

Using skills and knowledge of automated systems already developed in introductory courses, students learn the theory and receive the hands-on practice needed to use library databases. A component on choosing and comparing library software is included.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 4001 [0.5 credit]**Archives and Special Collections**

Principles and methods used by archivists and record managers in organizing their collections for better access and retrieval. Students also learn aspects of physical bibliography, the book trade, preservation and conservation of books and how to exhibit such material.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 4002 [0.5 credit]**Network Technology**

Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.

Includes: Experiential Learning Activity

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 4004 [0.5 credit]**Applied Big Data**

Introduction to Big Data and Artificial Intelligence.

Topics include: Association Rule Mining, Classification, Clustering, Linear and Logistic Regression, Hadoop Distributed File System, Spark, Batch and Stream Data Processing, and other related. Applications on other domains such as multimedia, networks, finance, and/or business.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 3006.

Lectures three hours a week.

IRM 4900 [1.0 credit]**IRM Capstone Project**

Student-initiated project developed in association with a project supervisor and external information resource management advisor. Project is supported by a written report, seminar discussions and final presentation. All proposals must be approved by the IRM Program Project Committee.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 3004, IRM 3007 or LIB 2030 and LIB 2047 and fourth year standing in the IRM program.

Tutorial hours arranged.

Information Technology (BIT) Courses**BIT 1000 [0.5 credit]****Mathematics I for NET**

Tailored for students in the Network Technology program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1100, BIT 1200, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1001 [0.5 credit]**Mathematics II for NET**

Tailored for students in the Network Technology program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1101, BIT 1201, ECON 1401, ECON 1402, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401, MATH 1402.

Prerequisite(s): BIT 1000.

Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1002 [0.5 credit]**Physics for Information Technology I**

An introductory course on energy, thermodynamics, sound and electromagnetic waves, optics, and modern physics. Practical skills are learned in the laboratory, which is a required part of the course.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1203, PHYS 1001, PHYS 1003, PHYS 1007.

Prerequisite(s): BIT 1100.

Lectures three hours a week, tutorial three hours/ laboratory three hours alternate weeks.

BIT 1006 [0.5 credit]**Achieving Success in Changing Environments**

Students explore the possibilities ahead, assess their own aptitudes and strengths, and apply critical thinking and decision-making tools to help resolve some of the important issues in our complex society with its competing interests.

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

BIT 1007 [0.5 credit]**Physics for NET**

An introductory course on energy, electrical networks (AC and DC circuits, resistance, impedance, capacitance), electrostatics (electric fields, static electricity), electromagnetism, electromagnetic waves, optics, and other topics in modern physics. Practical skills are learned in the laboratory, which is a required part of the course.

Precludes additional credit for BIT 1003 (no longer offered), BIT 1204, PHYS 1002, PHYS 1004, PHYS 1008.

Prerequisite(s): BIT 1000, Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial three hours/ laboratory three hours alternate weeks

BIT 1100 [0.5 credit]**Mathematics I for IMD**

Tailored for students in the Interactive Multimedia Design program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1000, BIT 1200, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1101 [0.5 credit]**Mathematics II for IMD**

Tailored for students in the Interactive MultiMedia Design program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1001, BIT 1201, ECON 1401, ECON 1402, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401, MATH 1402.

Prerequisite(s): BIT 1100.

Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1200 [0.5 credit]**Calculus**

Limits. Differentiation of the elementary functions, including trigonometric functions. Rules of differentiation. Applications of differentiation: max-min problems, curve sketching, approximations. Introduction to integration: definite and indefinite integrals, areas under curves, fundamental theorem of calculus.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1000, BIT 1100, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions; or MATH 0005 and MATH 0006; or equivalent.

Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1201 [0.5 credit]**Linear Algebra**

Systems of linear equations; vector space of n-tuples, subspaces and bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre's Theorem, and n-th roots). Eigenvalues, diagonalization and applications. Note: MATH 1119 is not an acceptable substitute for BIT 1201.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1001, BIT 1101, MATH 1102, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1203 [0.5 credit]**Newtonian Physics**

Mechanics, properties of matter, thermodynamics.

Applications chosen in part from the life sciences.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, PHYS 1001, PHYS 1003, PHYS 1007.

Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent; or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 or BIT 1200 (may be taken concurrently); or (iii) permission of the Department. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1204 [0.5 credit]**Electromagnetism & Modern Physics**

Electricity and magnetism, DC and AC circuits,

wave motion and light. Elements of modern physics.

Applications chosen in part from the life sciences.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, PHYS 1002, PHYS 1004, PHYS 1008.

Prerequisite(s): BIT 1203 or PHYS 1001 or PHYS 1003 or PHYS 1007 or permission of the Department. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1400 [0.5 credit]**Introduction to Programming and Problem Solving**

Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 1005, COMP 1405, ITEC 1400, ITEC 1401.

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory three hours a week.

BIT 2000 [0.5 credit]**Introduction to Statistics**

This course covers data analysis, introduction to probability theory, some standard discrete and continuous distributions and their application to interval estimation and significance testing, computational aspects of statistics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): restricted to students in the BIT degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2001 [0.5 credit]**Introduction to Business**

An overview of the most fundamental business functions.

The management of people, human resources, marketing, accounting and finances, business law and operations.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures: three hours a week.

BIT 2002 [0.5 credit]**Marketing in the IT sector**

Basic problems and practices in marketing. Marketing strategies, planning, packaging, branding and promotion at the level of the individual firm; distribution channels.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2204.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week.

BIT 2006 [0.5 credit]**Elective**

Students must choose from among a list of approved Electives at Algonquin College.

Precludes additional credit for BIT 3003 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, or as arranged.

BIT 2008 [0.5 credit]**Multimedia Data Management**

Concepts and fundamentals of database systems.

Design of relational databases, normalisation, referential integrity, structured query language (SQL), server-side scripting, organisation of multimedia content, dynamic page loading, storage and compression of media, media network considerations, digital watermarking and rights management.

Includes: Experiential Learning Activity

Precludes additional credit for ITEC 2000, IMD 2000 (no longer offered), IRM 2000 (no longer offered).

Prerequisite(s): BIT 1400 and IMD 1005 or IRM 1005.

Lecture three hours a week, tutorial/laboratory two hours a week.

BIT 2009 [0.5 credit]**Statistics for Technology**

This course covers statistical data analysis with an emphasis on hypothesis testing including parametric tests (e.g., t-tests, ANOVA) and non-parametric tests (e.g., Kruskal-Wallis, Friedman, chi-square), correlation and linear regression. Provides an introduction to probability theory and distributions (e.g. binomial, normal).

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2000, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): Restricted to students in the BIT degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2010 [0.5 credit]**Differential Equations & Multivariate Calculus**

Curves and surfaces. Polar, cylindrical and spherical coordinates. Partial derivatives, gradients, extrema and Lagrange multipliers. Exact differentials. Multiple integrals over rectangular and general regions. Integrals over surfaces. Line integrals. Vector differential operators. Green's Theorem, Stokes' theorem, Divergence Theorem. Applications.

Prerequisite(s): BIT 1200.

Lectures three hours a week, tutorial one hour a week.

BIT 2400 [0.5 credit]**Intermediate Programming**

Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 1006, COMP 1406, ITEC 2400, ITEC 2401.

Prerequisite(s): BIT 1400. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory three hours a week.

BIT 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

BIT 4000 [0.5 credit]**Directed Studies**

Independent study under the supervision of a member of the School of Information Technology, open only to students in the B.I.T. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to one such course in their program.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School of Information Technology.

BIT 4001 [0.5 credit]**Selected Topics in Information Technology**

Topics not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.

Prerequisite(s): third-year standing in the BIT Program or permission of the department.

Lecture three hours a week.

Interactive Multimedia and Design (IMD) Courses**IMD 1000 [0.5 credit]****Introduction to Interactive Multimedia Design**

Introduction to interactive multimedia and design, focused on the production and processes of animation, visual fx, game design and development, web design and development, and user experience/interfaces. Topics include: mark-up languages, design process/problem-solving tools, human-centered design, product development, ethics, and copyright and intellectual property.

Includes: Experiential Learning Activity

Precludes additional credit for ITEC 1100.

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lecture three hours a week.

IMD 1001 [0.5 credit]**Visual Communication**

Visual communication techniques commonly used to draft concepts and ideas to support scripts for film, animation, HCI, and/or game development. Topics include: storyboarding, composition, vanishing point, line quality, visual timing, perspective, depth of field, body language and life drawing. A digital drawing tablet is required.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 1000 and IMD 1002.

Workshop three hours a week.

IMD 1002 [0.5 credit]**Visual Dynamics**

Fundamentals of composition with emphasis on realistic rendering. Students learn how to execute thumbnails and design comprehensives. Topics include illustration, type, colour, texture, proximity and unity, alignment, repetition and continuity, contrast, size relationships, balance, rhythm, negative space, cropping and view selection.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop three hours a week.

IMD 1004 [0.5 credit]**Design Processes**

Design fundamentals using industry standard software techniques and workflow are explored. Topics include: gestalt principles, grids systems, colour, texture, raster and vector image production, and typography. Students design for publication to output such as Web, print, and electronic book formats. Required digital drawing tablet.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop three hours a week.

IMD 1005 [0.5 credit]**Web Development**

Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid xHTML, cascading style sheets (CSS), JavaScript and XML structures.

Includes: Experiential Learning Activity

Precludes additional credit for ITEC 1005.

Prerequisite(s): IMD 1000 and IMD 1004.

Workshop five hours a week.

IMD 2003 [0.5 credit]**Audio and Video**

The creation, production and editing of audio and video for multimedia applications. Topics include single camera recording and capture techniques through to post-production editing. Emphasis is placed on production and operation skills while adhering to industry standard costs and deadlines.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 1000 and IMD 1002.

Workshop four hours a week.

IMD 2006 [0.5 credit]**Introduction to Game Design and Development**

Basic concepts in the design and development of computer games, including: fundamentals of production cycle, genres, gameplay and game mechanics, story and character development, level design, artificial intelligence for games, game user interface, and common development tools.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400 and second-year standing in the IMD program.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 2007 [0.5 credit]**Intro to 3D Animation**

Introduction to the basics of 3D computer animation.

Topics include: introduction of 3D animation packages, 12 Principles of Animation, character design, character animation (walking/locomotion, motion, and poses), soft-body animation (shape interpolation and facial animation), and acting for animators.

Includes: Experiential Learning Activity

Precludes additional credit for IMD 2005 (no longer offered).

Prerequisite(s): BIT 1002 and second-year standing in the IMD program.

Lecture/workshop three hours a week.

IMD 2900 [1.0 credit]**Design Studio 1**

Advanced practical studio-based sessions focused on project management. Topics include: project management styles, team collaboration techniques, prototyping, project and content management, marketing, and testing/validation. The studio emphasizes the management of web design and development projects.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the IMD program.

Studio/lecture eight hours a week.

IMD 3002 [0.5 credit]**3D Computer Graphics**

Technical aspects of 3D computer graphics.

Homogeneous transformations, viewing pipeline, cinematography, modeling techniques (explicit and implicit), scene composition, level of detail methods, advanced lighting techniques (BRDF, IBL, subsurface-scattering), 2D/3D texturing, local/global illumination, rendering methods, and shaders.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 1101, BIT 2400 and IMD 3900.

Lectures three hours a week, tutorial/laboratory two hours per week.

IMD 3004 [0.5 credit]**Human Computer Interaction and Design**

Introduction to concepts centered on Human-Computer Interaction from hardware and software perspectives. Topics include design principles, usability principles and engineering, solving user-centred problems, device interaction, and graphical user interface design (2D and 3D interfaces).

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2009 and third-year standing in the IMD program.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3005 [0.5 credit]**Sensor-Based Interaction**

Development of interactive applications that connect the physical and virtual space. Topics include using external devices and sensor hardware, sensing objects and people, gestural input, computer vision, processing of live audio input, and networked software and devices.

Includes: Experiential Learning Activity

Precludes additional credit for IMD 2001 (no longer offered).

Prerequisite(s): BIT 2400.

Lecture/ workshop four hours a week.

IMD 3006 [0.5 credit]**Software Design for Multimedia Applications**

Provides students with knowledge and expertise to design and develop complex software systems and programs for common multimedia applications. Topics include: data structures, system and requirement analysis, component identification, common design patterns, and working with reusable components.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3900 [1.0 credit]**Design Studio 2**

Intermediate practical studio sessions covering the creative aspects of 3D graphics and animation. Topics include: environment and character modeling, texturing, using bump/displacement maps, advanced materials, 3D cameras, various lighting, keyframe animation, and rendering methods.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2007 and third-year standing in the IMD program.

Studio/lecture eight hours a week.

IMD 3901 [1.0 credit]**Design Studio 3**

Studio-based course focuses on interdisciplinary group work, and the use of reality-based/ natural-based interfaces for multiuser interaction, understanding social and environmental context in physical design, basic networking, advanced sound design, and haptic feedback. Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the IMD program, IMD 2900 and IMD 3005.

Studio/lecture eight hours a week.

IMD 4002 [0.5 credit]**Technology and Culture**

An examination of the relationship between communication technology and society. The course examines the factors that contribute to changes in the collection, storage and distribution of information and the cultural implications of these changes.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the IMD program.

Seminar three hours a week.

IMD 4005 [0.5 credit]**Advanced Topics in Multimedia**

Advanced topics in multimedia industry not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.

Includes: Experiential Learning Activity

Precludes additional credit for IMD 4004 (no longer offered).

Prerequisite(s): fourth-year standing in the IMD program.

Lecture three hours a week.

IMD 4006 [0.5 credit]**Advanced Game Design and Development**

Provides students with knowledge and expertise to design and develop professional computer games with advanced and novel features. Topics include: target audience and inclusive/accessible design, interaction design and emerging technologies, artificial intelligence, interactive stories, procedural content generation, serious games and gamification.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2006 and IMD 3002.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4008 [0.5 credit]**Mobile User Interface Design and Development**

Design, development, and evaluation of user interfaces for mobile applications. Topics include: user-centered design methods and develop mobile applications employing the various input and output capabilities available on mobiles, e.g., multi-touch, device motion/rotation, video/audio capture, vibration.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3004 and IMD 3006.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4901 [1.5 credit]**IMD Capstone Project**

Student-initiated digital media project, under the supervision of a project advisor, consisting of complete end-to-end production, from design to final product. Development will be assessed via design documents, project plans, progress presentations, culminating in a final exposition in front of a panel of industry experts.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2900, IMD 3004, IMD 3900, IMD 3901 and fourth-year standing in the IMD program. Tutorial hours arranged.

Network Technology (NET) Courses**NET 1001 [0.5 credit]****Computer Technology Basics**

Construction and function of PCs. Introduces technical concepts and terminology relating to system boards, system busses, input/output devices, memory, microprocessors and peripherals. Interaction of software and hardware; data storage; performance issues.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

NET 1002 [0.5 credit]**Networking Fundamentals**

Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 1006 [0.5 credit]**Routing and Switching**

Introduction to routing and switching concepts including, static and dynamic routing, trunking and VLANs. Topics include configuring routers and switches and resolving common configuration and reachability issues.

Includes: Experiential Learning Activity

Precludes additional credit for NET 1005 (no longer offered).

Prerequisite(s): NET 1002.

Lecture three hours a week, tutorial/laboratory three hours a week.

NET 2000 [0.5 credit]**Intermediate Networking**

Architecture, components and operations of routers and switches in Enterprise networks. Topics include configuration and troubleshooting of OSPF, including Multi-area, redundancy, NAT and troubleshooting techniques.

Includes: Experiential Learning Activity

Prerequisite(s): NET 1006.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 2007 [0.5 credit]**Basics of Transmission Systems**

Introduction to the fundamentals of information transmissions systems used in physical layer of the Internet. Covers time- and frequency-domain concepts, digital and analog transmission, signal encoding, sampling, modulation, demodulation, error detection and correction. Examples: DSL, Cable modem, and wireless LAN. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 1001 and BIT 1007.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 2008 [0.5 credit]**DevOps**

Exposure to unifying software development (Dev) and software operation (Ops). Use of Python to monitor and automate network management tasks.

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 2010 [0.5 credit]**Desktop and Server Environments I**

Using Linux and Windows Server, study of the basic features such as file system, system utilities, memory management, boot process troubleshooting and UI customizations. Client-Server architecture is examined with a focus on basic Server configuration and administration. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity

Precludes additional credit for NET 2002 (no longer offered).

Prerequisite(s): NET 1001.

Lecture two hours a week, tutorial/laboratory two hours a week.

NET 2011 [0.5 credit]**Desktop and Server Environments II**

Using Unix and Linux Operating systems, study of the command line and network Server operating environments. Configuring Services and Protocols such as DNS, NTP, SSH, SMB, SMTP, POP3, IMAP, HTTP, and DHCP. Basic Server security using firewalls is also introduced. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity

Precludes additional credit for NET 2003 (no longer offered).

Prerequisite(s): NET 2010.

Lecture two hours a week, tutorial/laboratory two hours a week.

NET 2012 [0.5 credit]**Networking Technologies and Automation**

Enterprise technologies and QoS mechanisms used for networks access. Topics include virtualization, and automation concepts. Software-defined networking, controller-based architectures and how application programming interfaces (APIs) enable network automation.

Includes: Experiential Learning Activity

Precludes additional credit for NET 2001 (no longer offered).

Prerequisite(s): NET 2000.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 2013 [0.5 credit]**Computer Systems Foundations**

Introduction to the design and implementation of digital circuits and microprocessors. Topics include: binary numbers and arithmetic, fundamentals of boolean algebra, combinational circuits, sequential circuits, computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts, computer arithmetic, CPU assembly instruction sets.

Includes: Experiential Learning Activity

Precludes additional credit for NET 1004 (no longer offered), PLT 1007 (no longer offered), NET 2009 (no longer offered), PLT 2009 (no longer offered), OSS 2009.

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory one hour a week.

NET 3000 [0.5 credit]**Database Concepts and SQL**

Concepts and fundamentals of relational database systems. Students learn how to design relational databases starting from a conceptual data model, following accepted logical and physical design principles. Topics include normalisation, referential integrity, SQL, DDL and SQL DML & ODBC and data extraction/filtering techniques.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the Networking program.

Lecture two hours a week, tutorial/laboratory two hours a week.

NET 3001 [0.5 credit]**Real-time Systems**

Principles of event-driven systems, review of computer organization; parallel and serial interfaces; programmable timer; I/O methods; polling and interrupts. Real-time kernels. Critical design consideration: concurrency, dead lock, synchronization. Maintaining and improving system performance. Programming exercises in low and high level languages.

Includes: Experiential Learning Activity

Also listed as OSS 3001.

Prerequisite(s): NET 2013.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3004 [0.5 credit]**Data Structures**

Specification and design of abstract data types and their implementation as stacks, queues, trees, tables and graphs. Common and useful examples. Parsing and finite state machines. Analysis of algorithms, recursion, re-entrance. Special focus: abstraction, interface specification and hierarchical design using object-oriented programming.

Includes: Experiential Learning Activity

Also listed as OSS 3004.

Precludes additional credit for PLT 3010 (no longer offered).

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3006 [0.5 credit]**Network Management and Measurements**

Key network management models (FCAPS, TMN), protocols and standards, such as SNMP. Introduction to and use of various management tools and methodologies. Current trends in network management and measurement. Security issues in collecting networking management information.

Includes: Experiential Learning Activity

Prerequisite(s): NET 3000 and NET 3004.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3007 [0.5 credit]**Network Security**

Basics of network security. Students are introduced to the goals of IT security, common threats and countermeasures including firewalls, intrusion detection and prevention systems (IDPS) and virtual private networks. Several operating environments will be studied as examples. Also includes a section on computer ethics.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2012.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3008 [0.5 credit]**Advanced Network Routing**

Routing IP at the enterprise level, within and between, autonomous systems. Advanced control and optimization of routing protocols and manipulation of traffic paths with multiple routing protocols. Working knowledge of Internet reachability via BGP.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2012.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 3010 [0.5 credit]**Web Programming**

Architectures, protocols and languages used to develop dynamic Web content, including HyperText Markup Language (HTML, DHTML), Universal Resource Identifiers (URI) and HyperText Transport Protocol (HTTP) and Common Gateway Interface (CGI). JavaScript and Java are used to model cross-platform Web programming.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400, NET 3000.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3011 [0.5 credit]**Advanced Network Switching**

VLANs and inter-VLAN routing in a multilayer switched environment. Variants of STP and the use of related enhancements. Techniques for network redundancy and load balancing. Securing a switched infrastructure. Architectures and techniques for delivering converged traffic in an enterprise environment.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2012.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 3012 [0.5 credit]**IP Architectures and Solutions**

An exploration of deployment options that can be implemented atop of a MPLS network. The focus is on technologies and architectures that serve to enhance IP delivery, or IP service leveraging the MPLS infrastructure.

Includes Layer 2 and 3 tunneling techniques. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity

Prerequisite(s): NET 3008.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3900 [0.5 credit]**Wireless Networks**

Design and configuration of Wi-Fi networks as used in commercial and enterprise venues. Topics include 802.11 family of protocols, wireless transmission, RF design, security methods and protocols, and system design. Topologies include campus, bridge and remote access.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2007.

Lectures two hours a week, tutorial/laboratory three hours a week.

NET 4000 [0.5 credit]**Emerging Network Technologies**

Overview of technologies, protocols and techniques related to Information Technology networking that are either in their early stage of adoption or are not yet mainstream (i.e. beta or prototype stage). Focus will vary from year to year to reflect the evolutionary nature of this domain.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Networking program or permission of the instructor.

Also offered at the graduate level, with different requirements, as ITEC 5110, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4001 [0.5 credit]**Network Simulation**

Introduction to discrete event simulation and network modeling; fundamental stochastic models for networking; introduction to queueing theory; random numbers; analysis of simulation data; confidence intervals. Use of different software tools to plan and perform simulations.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2000.

Also offered at the graduate level, with different requirements, as ITEC 5113, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4003 [0.5 credit]**Computer Systems Architecture**

History and evolution of computers. Models and functional descriptions of CPU, bus, memory, I/O. Internal data transfer and storage concepts. Bus protocols. Memory organization and cache principles. Digital logic and simple logic designs of CPU, buses, memory. Concepts of virtual machines, parallel computing, cloud computing.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in the Networking program, NET 2003 and NET 3001.

Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4005 [0.5 credit]**Networked Applications**

Architectures for computing in modern data networks that adopt the Internet architecture. Topics covered include socket programming, RPC and RMI. Client-server and peer-to-peer models. Emerging application architectures.

Includes: Experiential Learning Activity

Prerequisite(s): NET 3004 and NET 3010.

Also offered at the graduate level, with different requirements, as ITEC 5114, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4007 [0.5 credit]**Multimedia Networking**

Audio and video compression. H.261, JPEG, MPEG and DVI. Accessing audio and video from a web server. Real Time Streaming Protocol (RTSP). Multimedia operating systems. Multimedia database. Network support for multimedia applications. Multimedia synchronization.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.

Also offered at the graduate level, with different requirements, as ITEC 5111, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4009 [0.5 credit]**Troubleshooting IP Networks**

Integrates planned maintenance and troubleshooting techniques, including, tools, applications and formalized methodologies. Study of issues in focused areas (such as routed vs. switched environments, addressing services, performance, security, VPN), culminating in problem resolution throughout a complex enterprise network.

Includes: Experiential Learning Activity

Prerequisite(s): NET 3011, NET 3008.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 4010 [0.5 credit]**Secure Mobile Networking**

The concept, principle and rationale of mobile networking. Mobile network architecture, protocols, mobility management, routing and mobile TCP/IP; Security challenges, vulnerabilities and threats in mobile networks; Security defense techniques and countermeasures in mobile networks.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.

Also offered at the graduate level, with different requirements, as ITEC 5112, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4011 [0.5 credit]**Advanced Topics in Network Security**

Understanding classes of advanced attacks. Building secure networks. Adversarial Machine Learning. Security in clouds, virtualized networks, and IoT. Understanding impact of OS and software security issues. Security in next generation networks such as 5G.

Prerequisite(s): NET 3007.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4012 [0.5 credit]**Cloud Computing and Virtualization**

The basics of cloud computing and its driving technology behind: virtualization. Topics include how virtual machines and containers are deployed and orchestrated; how various resources and networks are virtualized and managed; hypervisor technology; virtual network management and micro-segmentation; cloud service provisioning; cloud security.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2013 and NET 3006.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4901 [1.0 credit]**NET Capstone Project**

This course provides the opportunity to apply knowledge gained in previous courses towards the design and implementation of a major Networking related project. Working in teams or as individuals under the direction of faculty members, students undertake projects internally or in collaboration with industry.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Networking program.

Tutorial hours arranged.

Optical Systems and Sensors (OSS) Courses**OSS 1002 [0.5 credit]****Applications in Photonics & Optoelectronics**

Survey of the history and future of photonics. Photonics benefits and impact on technology and society. Emerging applications of photonics in industry and commercial products. The forces (business, social, political, economic, technical, and educational) that influence the development, adoption and success or failure of technologies.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1002 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 1003 [0.5 credit]**Optics/Optical Fibers (Principles)**

Principles of optics, optical fiber, waveguides and hands-on experience with optical components. Optical fiber manufacturing and variety of industrial applications. Topics covered include: optical sources, detectors, fiber modes and mode-coupling, couplers, multiplexers, optical amplifiers, physical layer of optical networks, dispersion and nonlinear effects management.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1003 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 1005 [0.5 credit]**Introduction to Optics**

Physics of waves, optics and light propagation through lectures and lab experiments. Geometrical optics, refraction and reflection, interference, diffraction and polarization, thin lens equation, laser beams, Michelson interferometer, birefringence, and Abbe theory of imaging. Electromagnetic spectrum, quantum nature of light, photons, and photoelectric effect.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1005 (no longer offered).

Prerequisite(s): BIT 1203, restricted to students in the B.I.T. degree program.

Lectures two hour a week, tutorial/laboratory three hours a week.

OSS 1006 [0.5 credit]**Introduction to Automation and Simulation**

Introduction to basic programming in both the Matlab and Labview environments. Program development, basic structures (loops, control structures), I/O, data visualization and graphing will be covered. Students will learn to use Labview to develop basic applications and model simple physical systems with Matlab.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1006 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hour a week, tutorial/laboratory two hours a week.

OSS 2001 [0.5 credit]**Fundamentals of Light Sources**

Introduction to incoherent light sources and lasers. Lasers operation, energy levels, quantum mechanics basics. Pumping/excitation, population inversion, laser cavity design, gain and loss, and characteristics of laser emission. An extensive lab manual of relevant experiments, variety of lasers, spectrometers, and detection equipment will be used.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2001 (no longer offered).

Prerequisite(s): BIT 1201. Restricted to students in the BIT degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 2002 [0.5 credit]**Optical Communication Networks I**

Adaptive Optical Communication Networks with 10Gb/s-200Gb/s Packet-Optical Platforms and WebServers, OTN, flexible WaveLogic Photonics, ROADM, SONET/SDH, programmable network, optimized mapping techniques, optical carriers (OC-n/STM-m).

Extensive hands-on experience using state-of-the-art Optophotonics Lab to work on OAM&P, facility/equipment, synchronization, bandwidth management, performance monitoring and other functionalities.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2002 (no longer offered).

Prerequisite(s): OSS 1003.

Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 2003 [0.5 credit]**Laser Systems**

Laser theory, devices and systems. Safety procedures, laser power supplies, and laser system applications. Solid state, gas, and other types of lasers. Basic material processing, micro machining, bio/medical, and military applications will be covered. Hands-on experience with advanced laser equipment in lab.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2003 (no longer offered).

Prerequisite(s): OSS 2001 or PLT 2001 (no longer offered).

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 2005 [0.5 credit]**Circuits and Signals**

Students learn properties of electricity and measurement techniques. Topics covered include RMS, average, applied, peak-to-peak and instantaneous values. Lab experiments deal with RC and RL circuits and LC filters. RLC circuits, and series and parallel resonance are also covered.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2005 (no longer offered).

Prerequisite(s): BIT 1204 or PHYS 1004 or PHYS 1002.

Restricted to students in the BIT degree program.

Lectures two hours a week, laboratory and problem analysis three hours a week.

OSS 2006 [0.5 credit]**Integrated Circuits**

Fundamentals of logic circuitry in digital systems are studied including basic logic gates, Boolean algebra, signal decoding, logic circuit design, flip-flop circuits, timers and counters. The proper use of semi-conductor components is demonstrated through the use of laboratory experiments.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 2507, PLT 2006 (no longer offered).

Prerequisite(s): OSS 2005 or PLT 2005 (no longer offered). Restricted to students in the B.I.T. degree program.

Lectures two hours a week, laboratory and problem analysis three hours a week.

OSS 2008 [0.5 credit]**Manufacturing Photonics Components**

Manufacturing techniques and methods used to produce photonics components and devices/systems. Micro assembly, adhesives, optical tests and measurement, lean manufacturing and quality control standards (Telcordia). Laboratory exposure to optical component production processes: grinding, polishing, coating, mounting, tolerance and accuracy.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1004 and PLT 2008 (no longer offered).

Prerequisite(s): OSS 1002 or PLT 1002 (no longer offered). Restricted to students in the B.I.T. degree program.

Lectures two hours a week, laboratory two hours a week.

OSS 2009 [0.5 credit]**Assembly and Machine Language**

Structured approach to assembly language programming. Topics include data and address registers, data and address busses, condition code register and stack pointers, machine code format, instruction sizes, operand encoding, translation of source code into machine language, and how the processor executes instructions.

Includes: Experiential Learning Activity

Precludes additional credit for NET 1004 (no longer offered), NET 2013, PLT 1007 (no longer offered), PLT 2009 (no longer offered).

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory one hour a week.

OSS 2010 [0.5 credit]**Signals and Systems**

This course provides a solid theoretical foundation for the analysis and processing of experimental data, and real-time experimental control methods. Topics include various properties of signals and systems, convolution, the Fourier transform, sampling theorem, z-transform, spectral analysis, filter design, and system identification.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2010 (no longer offered).

Prerequisite(s): BIT 1200 and BIT 1201. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial one hour a week.

OSS 3000 [0.5 credit]**Optical Communication Networks II**

Operation, management and maintenance of metro/long-haul optical network elements and systems. Hands-on skills using GUI, Transaction Language One (TL1), optical network management to perform: alarm provisioning, line and path protection switching, security, data communications management, optical network backup and restore, load upgrade and installation management.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3000 (no longer offered).

Prerequisite(s): OSS 2002.

Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 3001 [0.5 credit]**Real-time Systems**

Principles of event-driven systems, review of computer organization; parallel and serial interfaces; programmable timer; I/O methods; polling and interrupts. Real-time kernels. Critical design consideration: concurrency, dead lock, synchronization. Maintaining and improving system performance. Programming exercises in low and high level languages.

Includes: Experiential Learning Activity

Also listed as NET 3001.

Precludes additional credit for PLT 3002 (no longer offered).

Prerequisite(s): OSS 2009 or PLT 2009 (no longer offered).

Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 3002 [0.5 credit]**Design of Optical Components and Systems**

Optical ray-tracing for analysing systems of sources, lenses, mirrors, prisms, fibers, diffractive elements, MEMS. Zemax® fundamentals, pupils, aspherics, non-sequential tracing, aberrations, image metrics, optimization/merit functions. Applications: imaging, illumination, lasers. Trade-offs, mechanical constraints, tolerances and cost. Physical optics modeling of beam propagation. Near-field diffraction and waveguides.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3004 (no longer offered).

Prerequisite(s): OSS 1003 or PLT 1003 (no longer offered).

Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 3003 [0.5 credit]**Fundamentals of Electromagnetics**

Review of basic vector calculus followed by an introduction to electrostatics and magnetostatics. Maxwell's equations and EM wave solutions. EM waves in dielectrics media, reflection, refraction, Fresnel relations and Brewster angle. Introduction to guided waves emphasizing slab waveguides.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3003 (no longer offered).

Prerequisite(s): BIT 1204 and BIT 2010.

Lecture and tutorial three hours a week.

OSS 3004 [0.5 credit]**Data Structures**

Specification and design of abstract data types and their implementation as stacks, queues, trees, tables and graphs. Common and useful examples. Parsing and finite state machines. Analysis of algorithms, recursion, re-entrance. Special focus: abstraction, interface specification and hierarchical design using object-oriented programming.

Includes: Experiential Learning Activity

Also listed as NET 3004.

Precludes additional credit for PLT 3010 (no longer offered).

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 3009 [0.5 credit]**Project Management**

Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of photonics using case studies.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3009 (no longer offered).

Prerequisite(s): third year standing in the Optical Systems and Sensors program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 3012 [0.5 credit]**Digital Signal Processing**

Operations-related topics including: sampling/reconstruction of continuous time signals, Fourier and Z-transforms, Discrete Fourier Transform (DFT), Fast Fourier Transform (FFT). Examination of other time and frequency domain techniques for designing and applying infinite impulse response (IIR) and finite impulse response (FIR) digital filters.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3012 (no longer offered).

Prerequisite(s): OSS 2010 or PLT 2010 (no longer offered).

Lectures three hours a week, tutorial one hour a week.

OSS 3013 [0.5 credit]**Software Design for Optical Systems and Sensors**

Provides students with knowledge and expertise to design and develop complex software systems and programs for common optical systems and sensors using Python. Topics include: system and requirement analysis, algorithms, component identification, common design patterns, and working with reusable components.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3013 (no longer offered).

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial two hours a week.

OSS 3014 [0.5 credit]**Optical Waves, Waveguides, and Sensors**

Analysis of guided-wave propagation and sensors. Topics include Maxwell's time-dependent wave equations, dielectric waveguides (slab, planar, segmented, rib, strip), optical fibres (modes, dispersion relations, propagation in dispersive media, nonlinear fibres), beam propagation methods, free space beam propagation, waveguide devices, and study of sensors technology.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3014 (no longer offered).

Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).

Lectures three hours a week, tutorial two hours a week.

OSS 4001 [0.5 credit]**Optoelectronic Devices**

Review of semiconductors, semiconductor lasers, detectors, photovoltaics. Electro, magneto and acousto-optic modulation devices. Transmitters, receivers, photo diodes, fiber sensors, and amplifiers, Mach–Zehnder interferometers. Polarization-mode dispersion. Experiments on non-linear optical elements, Sagnac and ring resonator, optical modulation.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4001 (no longer offered).

Prerequisite(s): OSS 3002 or PLT 3004 (no longer offered).

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4004 [0.5 credit]**Medical Imaging and Biosensors**

Biological and medical photonics. Effect of light on biological systems, medical imaging, medical treatments, biological research and bio/medical applications. Laser manipulation of cells, laser surgery, and photo-therapy. Biophotonic lab experiments with scanning confocal microscopes, endoscopes, DNA scanners.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4004 (no longer offered).

Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4006 [0.5 credit]**Image Processing**

Developing and evaluating algorithms for extracting the necessary information signals. Topics include filter design, fast transforms, adaptive filters, spectrum estimation and modeling, sensor array processing, image processing, motion estimation from images, applications in biomed, computer-aided tomography, image restoration, robotic vision, and pattern recognition.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4006 (no longer offered).

Prerequisite(s): BIT 2400 and OSS 3012.

Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 4008 [0.5 credit]**Remote Sensing**

Introduction to the basics of remote sensing, characteristics of remote sensors, and applications. Topics include: image acquisition and data collection, LIDAR sensors and platforms and derived digital products, imagery analysis, topographic mapping, and 3D modeling of urban infrastructure for autonomous vehicles.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4008 (no longer offered).

Prerequisite(s): OSS 3014 or PLT 3014 (no longer offered).

Lectures three hours a week, tutorial two hours a week.

OSS 4009 [0.5 credit]**Computer Vision**

Introduction to topics in computer vision, including: fundamentals of image formation, camera imaging geometry, f camera models, camera calibration, structure from motion, feature detection and matching, depth and stereo, image stabilization, image classification, automated alignment, scene understanding, recognition, and image searching.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4009 (no longer offered).

Prerequisite(s): OSS 4006 or PLT 4006 (no longer offered).

Lectures three hours a week, tutorial two hours a week.

OSS 4900 [1.0 credit]**OSS Capstone Project**

Research project develops students' ability to direct own learning and pursue advanced study in variety of subjects. Select topic, perform literature search, theoretical background, preliminary measurements, calculations, and design. Present findings in a preliminary thesis. Encourage writing technical papers. Research opportunities with industry and academia.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4900 (no longer offered).

Prerequisite(s): fourth-year standing.

Tutorial hours arranged.

Interdisciplinary Science and Practice

This section presents the requirements for programs in:

- Interdisciplinary Science and Practice B.Sc. Honours
- Interdisciplinary Science and Practice B.Sc.

Interdisciplinary Science and Practice B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 4.0 credits in:		4.0
ISAP 1001 [0.5]	Introduction to Interdisciplinary Science	
ISAP 1002 [0.5]	Seminar in Interdisciplinary Science	
ISAP 2001 [0.5]	Foundations in Critical Inquiry	

ISAP 2002 [0.5]	Research Principles for Interdisciplinary Science	
ISAP 3001 [0.5]	Principles and Applications in Data Analysis	
ISAP 3002 [0.5]	Applications in Interdisciplinary Research	
ISAP 3003 [0.5]	Science Communication	
ISAP 3004 [0.5]	Science Policy	
2. 1.0 credit from:		1.0
ISAP 4906 [1.0]	Capstone Course - Group Research Project	
ISAP 4907 [1.0]	Capstone Course - Research Essay	
ISAP 4908 [1.0]	Capstone Course - Individual Research Project	
3. 1.0 credit in:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
4. 0.5 credit from:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
5. 0.5 credit from:		0.5
COMP 1006 [0.5]	Introduction to Computer Science II	
STAT 2509 [0.5]	Introduction to Statistical Modeling II	
6. 1.0 credit from the Faculty of Science at the 2000 level or higher		1.0
7. 2.0 credits from the Faculty of Science at the 3000 level or higher		2.0
B. Credits Not Included in the Major CGPA (10.0 credits)		
8. 1.0 credit in:		1.0
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
9. 2.0 credits in Approved Experimental Science Courses as defined in the Regulations for the Bachelor of Science		2.0
10. 2.0 credits from the Faculty of Science at the 2000 level or higher		2.0
11. 2.0 credit in Approved courses outside the Faculties of Science and Engineering and Design, as defined in the Regulations for the Bachelor of Science. Note: students in the ISAP program may not use NSCI 1000 in this category.		2.0
12. 3.0 credits in free electives		3.0
13. Students are required to complete one minor from the Faculty of Science. A second minor (from any faculty, including Science) is encouraged. Students should consult with their academic advisor to ensure compliance with this requirement.		
Total Credits		20.0

Interdisciplinary Science and Practice

B.Sc. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in:		4.0
ISAP 1001 [0.5]	Introduction to Interdisciplinary Science	
ISAP 1002 [0.5]	Seminar in Interdisciplinary Science	
ISAP 2001 [0.5]	Foundations in Critical Inquiry	
ISAP 2002 [0.5]	Research Principles for Interdisciplinary Science	

ISAP 3001 [0.5]	Principles and Applications in Data Analysis	
ISAP 3002 [0.5]	Applications in Interdisciplinary Research	
ISAP 3003 [0.5]	Science Communication	
ISAP 3004 [0.5]	Science Policy	
2. 1.0 credit in:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
3. 0.5 credit from:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
4. 0.5 credit from:		0.5
COMP 1006 [0.5]	Introduction to Computer Science II	
STAT 2509 [0.5]	Introduction to Statistical Modeling II	
5. 1.0 credit from the Faculty of Science at the 2000 level or higher		1.0
6. 1.0 credit from the Faculty of Science at the 3000 level or higher		1.0
B. Credits Not Included in the Major CGPA (7.0 credits)		
7. 1.0 credit in:		1.0
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
8. 2.0 credits in Approved Experimental Science Courses as defined in the Regulations for the Bachelor of Science		2.0
9. 1.0 credit from the Faculty of Science at the 2000 level or higher		1.0
10. 1.0 credit in Approved courses outside the Faculties of Science and Engineering and Design, as defined in the Regulations for the Bachelor of Science. Note: students in the ISAP program may not use NSCI 1000 in this category.		1.0
11. 2.0 credits in free electives		2.0
12. Students are required to complete one Minor from the Faculty of Science. A second Minor from outside the Faculty of Science may be possible. Students should consult with their academic advisor to ensure compliance with this requirement.		
Total Credits		15.0

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**

2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics

PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)
BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.
CHEM (Chemistry)
COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)
FOOD (Food Science and Nutrition)
GEOM (Geomatics)
HLTH (Health Sciences)
ISAP (Interdisciplinary Science Practice)
MATH (Mathematics)
NEUR (Neuroscience)
PHYS (Physics), except PHYS 2903
Science Geography Courses (see list above)
Science Psychology Courses (see list above)
STAT (Statistics)
TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)
BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives
CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007
COMP (Computer Science) except COMP 1001
ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.
Engineering
ENSC 2001
FOOD (Food Science and Nutrition)
GEOM (Geomatics)
HLTH (Health Science)
ISAP (Interdisciplinary Science Practice)
MATH (Mathematics)
NEUR (Neuroscience)
PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903
Science Geography (see list above)
Science Psychology (see list above)
STAT (Statistics)
TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Interdisciplinary Science and Practice: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student (2.0 credits) in the Bachelor of Science Honours in Interdisciplinary Science and Practice;
2. Successfully completed, by the start date of the first work term, the following 2.0 credits: ISAP 3001, ISAP 3002, ISAP 3003, ISAP 3004.
3. Have obtained third-year standing;
4. Obtained and maintained a major CGPA of 9.0 or higher and an overall CGPA of 7.5 or higher in the first three years of academic study;

B.Sc. Honours Interdisciplinary Science and Practice students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: ISAP 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	S
Summer		Summer		Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced

standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Interdisciplinary Science and Practice (ISAP) Courses

ISAP 1001 [0.5 credit]

Introduction to Interdisciplinary Science

What is interdisciplinarity and what are the challenges and opportunities of collaboration within and across disciplines in science and beyond? Topics include types of biases, public datasets and science communication.

Lectures and discussion three hours per week.

ISAP 1002 [0.5 credit]

Seminar in Interdisciplinary Science

Exploring the role of interdisciplinarity in discovery and innovation, and discussion of selected issues facing society and the role of science. Topics include finding information, collaboration and science communication tools.

Prerequisite(s): ISAP 1001.

Seminar three hours per week.

ISAP 2001 [0.5 credit]

Foundations in Critical Inquiry

What is science and the scientific method? Topics include the scientific method, credible sources of information, knowledge gaps, the impact of scientific discoveries, and discussion of their local and global implications.

Prerequisite(s): ISAP 1002 or permission of the Institute.

Lecture three hours per week, workshop two hours per week.

ISAP 2002 [0.5 credit]

Research Principles for Interdisciplinary Science

Exploring how research is conducted. Topics include publicly available databases, the role of communication in research, stakeholders and participants, and the process of identifying knowledge gaps and developing research questions.

Prerequisite(s): ISAP 2001 or permission of the Institute.

Lecture three hours per week.

ISAP 3001 [0.5 credit]

Principles and Applications in Data Analysis

Development of strategies for obtaining and analyzing data. Topics include: survey of publicly available science-data resources; identification of coincidental, correlational and causal relationships; statistical data-analysis techniques; concepts of risk and error propagation in measured and calculated values. Applications in the physical and biological sciences.

Prerequisite(s): ISAP 2002, COMP 1005 and STAT 2507 or permission of the Institute.

Lecture three hours per week, workshop two hours per week.

ISAP 3002 [0.5 credit]

Applications in Interdisciplinary Research

Application of skills from Interdisciplinary Science and Practice (ISAP) courses to develop a research proposal. Topics include: research ethics; identification of stakeholders; inclusive consultation, collaboration and dissemination strategies.

Prerequisite(s): ISAP 2002 or permission of the Institute.

Lecture three hours per week, workshop two hours per week.

ISAP 3003 [0.5 credit]

Science Communication

How is science perceived and how has science been communicated? Students will use case studies to assess examples of science communication with varying outcomes. Topics include the principles of effective science communication, the range of tools available, and knowing the audience.

Includes: Experiential Learning Activity

Prerequisite(s): ISAP 2002 or permission of the Institute.

Lecture and seminar three hours per week.

ISAP 3004 [0.5 credit]

Science Policy

Exploration of how science-related policy is developed and the impact of policy on science. Topics include policy frameworks, stakeholder roles, power relationships, commercialization and the funding of science.

Prerequisite(s): ISAP 3003 or permission of the Institute.

Lecture and seminar three hours per week.

ISAP 3700 [0.5 credit]**Topics in Interdisciplinary Science**

Specific topics of current interest. Topics may vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): Second year standing in the Interdisciplinary Science and Practice program or permission of the Institute.

Seminar/workshop three hours per week.

ISAP 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ISAP 4700 [0.5 credit]**Topics in Interdisciplinary Science**

Specific topics of current interest. Topics may vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing in the Interdisciplinary Science and Practice program or permission of the Institute.

Seminar three hours per week.

ISAP 4901 [0.5 credit]**Directed Studies**

Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Interdisciplinary Science and Practice (ISAP) program and permission of the instructor.

ISAP 4906 [1.0 credit]**Capstone Course - Group Research Project**

Students will collaborate on a project that addresses a real-world issue in a team environment. Focus includes: design and completion of a research project; development of communication, critical inquiry, data analysis and research skills; and the opportunity to develop initiative, creativity and self-reliance.

Includes: Experiential Learning Activity

Precludes additional credit for ISAP 4907, ISAP 4908.

Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program and permission of the Institute.

Lecture, seminar and workshop four hours per week, as scheduled by the instructor.

ISAP 4907 [1.0 credit]**Capstone Course - Research Essay**

A substantial, independent essay or research proposal-based critical review and research proposal, using library, database and/or bioinformatic resources, under the direct supervision of the instructor. Topics include identification and critical review of resources, development of writing skills and formulation of research question and strategy.

Includes: Experiential Learning Activity

Precludes additional credit for ISAP 4906, ISAP 4908.

Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program or permission of the Institute.

Lecture, seminar and workshop four hours per week, as scheduled by the instructor.

ISAP 4908 [1.0 credit]**Capstone Course - Individual Research Project**

An independent research project under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for ISAP 4906, ISAP 4907.

Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program, a major CGPA of 9.0 or higher, and permission of the Institute.

Lectures and discussion as scheduled by the course coordinator; other hours as arranged with the faculty advisor.

ISAP 4999 [0.0 credit]**Science Communication Certificate Professional Development Workshop**

A one-day workshop providing practical skills development for becoming an effective science communicator. Topics for discussion will include defining the audience and framing of information, reviews of effective science communication, career opportunities for science communicators, and one-to-one analysis of participants writing skills. Graded SAT/UNS.

Includes: Experiential Learning Activity

Also listed as JOUR 4999.

Prerequisite(s): This course is restricted to students enrolled in the Certificate of Science Communication, and who have completed at least 2.0 credits towards the certificate, including one of COMS 2500 or ISAP 3003.

A one-day workshop

Italian (Minor)

This section presents the requirements for programs in:

- Minor in Italian

Minor in Italian (4.0 credits)

Open to all undergraduate degree students.

Requirements:

1. 3.0 credits in ITAL	3.0
2. 1.0 credit in ITAL at the 3000-level or higher	1.0

3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Italian (ITAL) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ITAL 1010 [0.5 credit]

First-Year Italian I

For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for ITAL 1110.

Four hours a week.

ITAL 1020 [0.5 credit]

First-Year Italian II

Continuation of first-year Italian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for ITAL 1110.

Prerequisite(s): grade of C or higher in ITAL 1010, or permission of the School.

Four hours a week.

ITAL 1110 [1.0 credit]

Intensive First-Year Italian

For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for ITAL 1010 and ITAL 1020.

Eight hours a week (one term).

ITAL 2010 [0.5 credit]

Second-Year Italian I

Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for ITAL 2110.

Prerequisite(s): grade of C or higher in ITAL 1020 or ITAL 1110, or permission of the School.

Four hours a week.

ITAL 2020 [0.5 credit]

Second-Year Italian II

Continuation of second-year Italian. Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language.

Compulsory attendance.

Precludes additional credit for ITAL 2110.

Prerequisite(s): grade of C or higher in ITAL 2010, or permission of the School.

Four hours a week.

ITAL 2110 [1.0 credit]

Intensive Second-Year Italian

Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for ITAL 2010 or ITAL 2020.

Prerequisite(s): grade of C or higher in ITAL 1020, ITAL 1110, or permission of the School.

Eight hours a week (one term).

ITAL 3110 [1.0 credit]

Intensive Third-Year Italian

Further study of Italian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in ITAL 2000 (no longer offered), ITAL 2020, ITAL 2110, or permission of the School.

Six hours a week (one term).

ITAL 4110 [1.0 credit]

Intensive Fourth-Year Italian

Advanced spoken and written Italian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Prerequisite(s): grade of C or higher in ITAL 3110, or permission of the School.

Six hours a week (one term).

ITAL 4900 [1.0 credit]

Independent Study

Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.

ITAL 4901 [0.5 credit]

Independent Study

Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.

Japanese Language (Minor)

This section presents the requirements for programs in:

- Minor in Japanese Language

Minor in Japanese Language (4.0 credits)

Open to all undergraduate degree students.

Requirements:

- | | |
|--|-----|
| 1. 3.0 credits in JAPA | 3.0 |
| 2. 1.0 credit in JAPA at the 3000-level or higher | 1.0 |
| 3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language | |
| 4. The remaining requirements of the major discipline(s) and degree must be satisfied. | |

Total Credits 4.0

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to

complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Japanese (JAPA) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

JAPA 1010 [0.5 credit]

First-Year Japanese I

For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for JAPA 1110. Four hours a week.

JAPA 1020 [0.5 credit]

First-Year Japanese II

Continuation of first-year Japanese. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for JAPA 1110. Prerequisite(s): grade of C or higher in JAPA 1010, or permission of the School. Four hours a week.

JAPA 1110 [1.0 credit]

Intensive First-Year Japanese

For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for JAPA 1010 and JAPA 1020. Eight hours a week (one term).

JAPA 2110 [1.0 credit]

Intensive Second-Year Japanese

Further study of Japanese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Prerequisite(s): grade of C or higher in JAPA 1020 or JAPA 1110, or permission of the School. Eight hours a week (one term).

JAPA 3010 [0.5 credit]**Third-Year Japanese I**

Further study of Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies.

Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 2110, or permission of the School.

Three hours a week.

JAPA 3011 [0.5 credit]**Reading in Japanese – Kanji I**

Intended for students taking JAPA 3010 and those who want to learn kanji in depth and become proficient in reading various Japanese texts. The course is intended primarily for students who do not use Chinese characters in their first language.

Prerequisite(s): grade of C or higher in JAPA 2110 or permission of the School.

Three hours a week.

JAPA 3020 [0.5 credit]**Third-Year Japanese II**

Continuation of third-year Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 3010, or permission of the School.

Three hours a week.

JAPA 3021 [0.5 credit]**Reading in Japanese – Kanji II**

A continuation of Reading in Japanese – Kanji I. Further development of reading skills in Japanese. Intended primarily for students who do not use Chinese characters in their first language.

Prerequisite(s): grade of C or higher in JAPA 3011 or permission of the School.

Three hours a week.

JAPA 4010 [0.5 credit]**Fourth-Year Japanese I**

Development of speaking and writing abilities more complex than those used in daily communication.

Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 3020, or permission of the School.

Three hours a week.

JAPA 4020 [0.5 credit]**Fourth-Year Japanese II**

Continuation of fourth-year Japanese. Further development of speaking and writing abilities more complex than those used in daily communication.

Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 4010, or permission of the School.

Three hours a week.

JAPA 4210 [0.5 credit]**Functional Contemporary Japanese I**

Further study of Japanese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication.

Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Prerequisite(s): grade of C or higher in JAPA 4020 or permission of the School.

Three hours a week.

JAPA 4220 [0.5 credit]**Functional Contemporary Japanese II**

Continuation of JAPA 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Prerequisite(s): grade of C or higher in JAPA 4210 or permission of the School.

Three hours a week.

JAPA 4900 [1.0 credit]**Independent Study**

Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, a grade of C or higher in JAPA 4020 or equivalent, or permission of the School.

JAPA 4901 [0.5 credit]**Independent Study**

Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, JAPA 4020 or equivalent, or permission of the School.

Journalism

This section presents the requirements for programs in:

- Journalism B.J. Honours
- Journalism with Concentration in Health Sciences B.J. Honours

- Journalism B.J. Combined Honours
- Journalism and Communication and Media Studies B.J. Combined Honours
- Media Production and Design B.M.P.D. Honours
- Minor in News Media and Information

Program Requirements

Journalism

B.J. Honours (20.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in: 1.0

JOUR 1001 [0.5]	Foundations: Journalism in Context
JOUR 1002 [0.5]	Foundations: Practicing Journalism in a Diverse Society

2. 2.0 credits in: 2.0

JOUR 2201 [1.0]	Fundamentals of Reporting
JOUR 2202 [0.5]	Digital Journalism Toolkit
JOUR 2501 [0.5]	Media Law

3. 2.5 credits in: 2.5

JOUR 3207 [0.5]	Audio Journalism
JOUR 3208 [0.5]	Video Journalism
JOUR 3225 [0.5]	Reporting in Depth
JOUR 3235 [0.5]	Digital Journalism
JOUR 3300 [0.5]	Media Ethics in a Digital World

4. 0.5 credit in: 0.5

JOUR 4001 [0.5]	Journalism Now - and Next
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5. 2.0 credits from: Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism (at least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses) 2.0

Journalism Publications

JOUR 4003 [0.5]	The Digital Hub: Advanced Multimedia (Journalism Publications)
JOUR 4004 [0.5]	The Digital Hub: Advanced Audio
JOUR 4005 [0.5]	The Digital Hub: Advanced Video

Specialized Journalism

JOUR 4300 [0.5]	Specialized Journalism: Special Topic
JOUR 4301 [0.5]	Specialized Journalism: Business and the Markets
JOUR 4302 [0.5]	Specialized Journalism: Business and Canadian Society
JOUR 4303 [0.5]	Specialized Journalism: Health and Science
JOUR 4304 [0.5]	Specialized Journalism: Environment and Science
JOUR 4305 [0.5]	Specialized Journalism: Canada and the U.S.
JOUR 4306 [0.5]	Specialized Journalism: Canada and the World
JOUR 4308 [0.5]	Specialized Journalism: Sports and Sport Culture
JOUR 4309 [0.5]	Specialized Journalism: Arts and Culture
JOUR 4310 [0.5]	Specialized Journalism: Justice and the Law

JOUR 4311 [0.5]	Specialized Journalism: Justice and The Supreme Court
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Professional Skills

JOUR 4400 [0.5]	Professional Skills: Special Topic
JOUR 4401 [0.5]	Professional Skills: Data Storytelling
JOUR 4402 [0.5]	Professional Skills: Longform Writing
JOUR 4403 [0.5]	Professional Skills: Strategic Communication
JOUR 4404 [0.5]	Professional Skills: Freelancing for Media Professionals

Investigating Journalism

JOUR 4500 [0.5]	Investigating Journalism: Special Topic
JOUR 4501 [0.5]	Investigating Journalism: Gender, Identity and Inequality
JOUR 4502 [0.5]	Investigating Journalism: Journalism and Conflict
JOUR 4503 [0.5]	Investigating Journalism: Journalism, Indigenous Peoples and Canada
JOUR 4504 [0.5]	Investigating Journalism: The Media and International Development
JOUR 4505 [1.0]	Investigating Journalism: The Power and Politics of Government

B. Credits Not Included in the Major CGPA (12.0 credits)

6. Students must complete at least a Minor in a field other than journalism (typically 4.0 credits, with requirements for the Minor specified by the other academic unit). 4.0

7.a. 0.5 credits from: 0.5

HIST 1301 [0.5]	Conflict and Change in Early Canadian History
HIST 1302 [0.5]	Rethinking Modern Canadian History
HIST 2301 [0.5]	Canadian Political History
HIST 2304 [1.0]	Social and Cultural History of Canada (See Item 8 below)
HIST 2311 [0.5]	Environmental History of Canada

b. 0.5 credits from: 0.5

INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
INDG 2011 [0.5]	Contemporary Indigenous Studies

8. 7.0 credits in free electives. Students who take HIST 2304 to fulfill Item 7a will have 6.5 credits in free electives. Free elective credits may include JOUR courses in the 4300 series of courses, 4400 series of courses and 4500 series of courses, JOUR 4003, JOUR 4004 and JOUR 4005. 7.0

Total Credits 20.0

Journalism with Concentration in Health Sciences

B.J. Honours (20.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in: 1.0

JOUR 1001 [0.5]	Foundations: Journalism in Context
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JOUR 1002 [0.5]	Foundations: Practicing Journalism in a Diverse Society	
2. 2.0 credits in:		2.0
JOUR 2201 [1.0]	Fundamentals of Reporting	
JOUR 2202 [0.5]	Digital Journalism Toolkit	
JOUR 2501 [0.5]	Media Law	
3. 2.5 credits in:		2.5
JOUR 3207 [0.5]	Audio Journalism	
JOUR 3208 [0.5]	Video Journalism	
JOUR 3225 [0.5]	Reporting in Depth	
JOUR 3235 [0.5]	Digital Journalism	
JOUR 3300 [0.5]	Media Ethics in a Digital World	
4. 0.5 credit in:		0.5
JOUR 4001 [0.5]	Journalism Now - and Next	
5. 0.5 credit from - Journalism Publications:		0.5
JOUR 4003 [0.5]	The Digital Hub: Advanced Multimedia	
JOUR 4004 [0.5]	The Digital Hub: Advanced Audio	
JOUR 4005 [0.5]	The Digital Hub: Advanced Video	
6. 0.5 credit from - Specialized Journalism:		0.5
JOUR 4303 [0.5]	Specialized Journalism: Health and Science	
JOUR 4304 [0.5]	Specialized Journalism: Environment and Science	
7. 1.0 credit from - Professional Skills and/or Investigating Journalism:		1.0
Professional Skills		
JOUR 4400 [0.5]	Professional Skills: Special Topic	
JOUR 4401 [0.5]	Professional Skills: Data Storytelling	
JOUR 4402 [0.5]	Professional Skills: Longform Writing	
JOUR 4403 [0.5]	Professional Skills: Strategic Communication	
JOUR 4404 [0.5]	Professional Skills: Freelancing for Media Professionals	
Investigating Journalism		
JOUR 4500 [0.5]	Investigating Journalism: Special Topic	
JOUR 4501 [0.5]	Investigating Journalism: Gender, Identity and Inequality	
JOUR 4502 [0.5]	Investigating Journalism: Journalism and Conflict	
JOUR 4503 [0.5]	Investigating Journalism: Journalism, Indigenous Peoples and Canada	
JOUR 4504 [0.5]	Investigating Journalism: The Media and International Development	
JOUR 4505 [1.0]	Investigating Journalism: The Power and Politics of Government	
B. Credits Not Included in the Major CGPA (12.0 credits)		
8. 1.0 credit in:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
9. 2.0 credits in Health Science courses:		2.0
HLTH 1001 [0.5]	Principles of Health I	
HLTH 2001 [0.5]	Health Research Methods and Skills	

HLTH 2002 [0.5]	Molecular and Cellular Pathology	
HLTH 2003 [0.5]	Social Determinants of Health	
10. 1.0 credit in a capstone course:		1.0
NSCI 4901 [1.0]	Science Journalism Independent Project	
11. 2.0 credit in electives in Health Sciences, including courses from Biology, Neuroscience and Psychology		2.0
12 a. 0.5 credit from:		0.5
HIST 1301 [0.5]	Conflict and Change in Early Canadian History	
HIST 1302 [0.5]	Rethinking Modern Canadian History	
HIST 2301 [0.5]	Canadian Political History	
HIST 2304 [1.0]	Social and Cultural History of Canada (See Item 13 below)	
HIST 2311 [0.5]	Environmental History of Canada (b. 0.5 credit from:)	
b. 0.5 credit from:		0.5
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	
INDG 2011 [0.5]	Contemporary Indigenous Studies	
13. 5.0 credits in free electives. Students who take HIST 2304 to fulfill Item 12a will have 4.5 credits in free electives. Free elective credits may include JOUR courses in the 4300 series of courses, 4400 series of courses and 4500 series of courses, JOUR 4003, JOUR 4004 and JOUR 4005.		5.0
Total Credits		20.0

Bachelor of Journalism Combined Honours

Bachelor of Journalism students may take Combined Honours programs in which Journalism is combined with another discipline. Students may choose a Combined Honours program in Journalism and Communication and Media Studies, or from Combined Honours programs offered within the B.A. The Journalism requirements for the Combined Honours program are normally the same as those for the Bachelor of Journalism with Honours listed above. The requirements of the other discipline are the same as those listed for the B.A. Combined Honours program in that discipline. Students are advised to consult the Combined Honours entry of their second discipline in this calendar for details. Combined Honours programs in Journalism and other disciplines are available only to students registered in Journalism.

Journalism

B.J. Combined Honours (20.0 credits)

A. Credits Included in the Journalism CGPA (8.0 credits)

1. 1.0 credit in:		1.0
JOUR 1001 [0.5]	Foundations: Journalism in Context	
JOUR 1002 [0.5]	Foundations: Practicing Journalism in a Diverse Society	
2. 2.0 credits in:		2.0
JOUR 2201 [1.0]	Fundamentals of Reporting	
JOUR 2202 [0.5]	Digital Journalism Toolkit	
JOUR 2501 [0.5]	Media Law	

3. 2.5 credits in:	2.5
JOUR 3207 [0.5] Audio Journalism	
JOUR 3208 [0.5] Video Journalism	
JOUR 3225 [0.5] Reporting in Depth	
JOUR 3235 [0.5] Digital Journalism	
JOUR 3300 [0.5] Media Ethics in a Digital World	
4. 0.5 credit in:	0.5
JOUR 4001 [0.5] Journalism Now - and Next	
5. 2.0 credits from - Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism (at least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses)	2.0
Journalism Publications	
JOUR 4003 [0.5] The Digital Hub: Advanced Multimedia	
JOUR 4004 [0.5] The Digital Hub: Advanced Audio	
JOUR 4005 [0.5] The Digital Hub: Advanced Video	
Specialized Journalism	
JOUR 4300 [0.5] Specialized Journalism: Special Topic	
JOUR 4301 [0.5] Specialized Journalism: Business and the Markets	
JOUR 4302 [0.5] Specialized Journalism: Business and Canadian Society	
JOUR 4303 [0.5] Specialized Journalism: Health and Science	
JOUR 4304 [0.5] Specialized Journalism: Environment and Science	
JOUR 4305 [0.5] Specialized Journalism: Canada and the U.S.	
JOUR 4306 [0.5] Specialized Journalism: Canada and the World	
JOUR 4308 [0.5] Specialized Journalism: Sports and Sport Culture	
JOUR 4309 [0.5] Specialized Journalism: Arts and Culture	
JOUR 4310 [0.5] Specialized Journalism: Justice and the Law	
JOUR 4311 [0.5] Specialized Journalism: Justice and The Supreme Court	
Professional Skills	
JOUR 4400 [0.5] Professional Skills: Special Topic	
JOUR 4401 [0.5] Professional Skills: Data Storytelling	
JOUR 4402 [0.5] Professional Skills: Longform Writing	
JOUR 4403 [0.5] Professional Skills: Strategic Communication	
JOUR 4404 [0.5] Professional Skills: Freelancing for Media Professionals	
Investigating Journalism	
JOUR 4500 [0.5] Investigating Journalism: Special Topic	
JOUR 4501 [0.5] Investigating Journalism: Gender, Identity and Inequality	
JOUR 4502 [0.5] Investigating Journalism: Journalism and Conflict	

JOUR 4503 [0.5] Investigating Journalism: Journalism, Indigenous Peoples and Canada	
JOUR 4504 [0.5] Investigating Journalism: The Media and International Development	
JOUR 4505 [1.0] Investigating Journalism: The Power and Politics of Government	
B. Additional Requirements (12.0 credits)	12.0
6.a. 0.5 credit from:	
HIST 1301 [0.5] Conflict and Change in Early Canadian History	
HIST 1302 [0.5] Rethinking Modern Canadian History	
HIST 2301 [0.5] Canadian Political History	
HIST 2304 [1.0] Social and Cultural History of Canada (See Item 8 below)	
HIST 2311 [0.5] Environmental History of Canada	
6.b. 0.5 credit from:	
INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters	
INDG 2011 [0.5] Contemporary Indigenous Studies	
7. The requirements from the other discipline including, where required, an honours research essay	
8. Sufficient free electives to make 20.0 credits for the whole program. Students who take HIST 2304 will have 0.5 credits less to complete. Free elective credits may include JOUR courses in the 4300 series of courses, 4400 series of courses and 4500 series of courses, JOUR 4003, JOUR 4004 and JOUR 4005.	
Total Credits	20.0

Note: Item 8 above may be satisfied by courses simultaneously fulfilling requirements of the other discipline.

Journalism and Communication and Media Studies

B.J. Combined Honours (20.0 credits)

This program is available only to students registered in the Bachelor of Journalism program.

A. Credits Included in the Journalism Major CGPA (8.0 credits):

1. 6.0 credits in:	6.0
JOUR 1001 [0.5] Foundations: Journalism in Context	
JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society	
JOUR 2201 [1.0] Fundamentals of Reporting	
JOUR 2202 [0.5] Digital Journalism Toolkit	
JOUR 2501 [0.5] Media Law	
JOUR 3207 [0.5] Audio Journalism	
JOUR 3208 [0.5] Video Journalism	
JOUR 3225 [0.5] Reporting in Depth	
JOUR 3235 [0.5] Digital Journalism	
JOUR 3300 [0.5] Media Ethics in a Digital World	
JOUR 4001 [0.5] Journalism Now - and Next	

2. 2.0 credits from - Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism (at least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses)

Journalism Publications	
JOUR 4003 [0.5]	The Digital Hub: Advanced Multimedia
JOUR 4004 [0.5]	The Digital Hub: Advanced Audio
JOUR 4005 [0.5]	The Digital Hub: Advanced Video

Specialized Journalism	
JOUR 4300 [0.5]	Specialized Journalism: Special Topic
JOUR 4301 [0.5]	Specialized Journalism: Business and the Markets
JOUR 4302 [0.5]	Specialized Journalism: Business and Canadian Society
JOUR 4303 [0.5]	Specialized Journalism: Health and Science
JOUR 4304 [0.5]	Specialized Journalism: Environment and Science
JOUR 4305 [0.5]	Specialized Journalism: Canada and the U.S.
JOUR 4306 [0.5]	Specialized Journalism: Canada and the World
JOUR 4309 [0.5]	Specialized Journalism: Arts and Culture
JOUR 4308 [0.5]	Specialized Journalism: Sports and Sport Culture
JOUR 4310 [0.5]	Specialized Journalism: Justice and the Law
JOUR 4311 [0.5]	Specialized Journalism: Justice and The Supreme Court

Professional Skills	
JOUR 4400 [0.5]	Professional Skills: Special Topic
JOUR 4401 [0.5]	Professional Skills: Data Storytelling
JOUR 4402 [0.5]	Professional Skills: Longform Writing
JOUR 4403 [0.5]	Professional Skills: Strategic Communication
JOUR 4404 [0.5]	Professional Skills: Freelancing for Media Professionals

Investigating Journalism	
JOUR 4500 [0.5]	Investigating Journalism: Special Topic
JOUR 4501 [0.5]	Investigating Journalism: Gender, Identity and Inequality
JOUR 4502 [0.5]	Investigating Journalism: Journalism and Conflict
JOUR 4503 [0.5]	Investigating Journalism: Journalism, Indigenous Peoples and Canada
JOUR 4504 [0.5]	Investigating Journalism: The Media and International Development
JOUR 4505 [1.0]	Investigating Journalism: The Power and Politics of Government

B. Credits Included in the Communication and Media Studies Major CGPA (7.0 credits):

3. 1.0 credit in: 1.0

COMS 2003 [0.5]	Theoretical Foundations in Communication and Media Studies
COMS 2004 [0.5]	Introduction to Communication Research

4. 1.5 credits in: 1.5

COMS 3001 [0.5]	Quantitative Research in Communication
COMS 3002 [0.5]	Qualitative Research in Communication
COMS 3500 [0.5]	Current Issues in Communication and Media Theory

5. 2.5 credits, including at least 0.5 credit at the 3000 level, chosen from: 2.5

COMS 2200 [0.5]	Big Data and Society
COMS 2300 [0.5]	Communication as Propaganda
COMS 2500 [0.5]	Communication and Science
COMS 2501 [0.5]	Media Law
COMS 2504 [0.5]	Language and Communication
COMS 2600 [0.5]	Communication and Culture
COMS 2700 [0.5]	Global Media and Communication
COMS 3100 [0.5]	Introduction to Political Management
COMS 3108 [0.5]	Media Industries and the Network Society
COMS 3109 [0.5]	Communication, Culture and Identity
COMS 3302 [0.5]	Political Communication
COMS 3308 [0.5]	Critical Studies in Advertising and Consumer Culture
COMS 3310 [0.5]	Critical Perspectives of Public Relations
COMS 3311 [0.5]	Media and Communication in Regional Contexts
COMS 3400 [0.5]	Ethical Controversies in Media and Communication
COMS 3401 [0.5]	Communications Regulation in Canada
COMS 3403 [0.5]	Communication, Technology and Culture
COMS 3404 [0.5]	Music Industries
COMS 3406 [0.5]	Media Audiences and Users
COMS 3407 [0.5]	Comparative Media Studies
COMS 3410 [0.5]	Visual Media and Communication
COMS 3411 [0.5]	Media and Social Activism
COMS 3412 [0.5]	Communication and Health
COMS 3800 [0.5]	Special Topic in Communication and Media Studies

6. 2.0 credits from: 2.0

COMS 4004 [0.5]	Communication and Discourse
COMS 4305 [0.5]	Media and Religion
COMS 4306 [0.5]	Media and Conflict
COMS 4311 [0.5]	Environmental Communication
COMS 4312 [0.5]	Crisis and Risk Communication
COMS 4313 [0.5]	Screen Studies
COMS 4315 [0.5]	Communication and the Built Environment
COMS 4316 [0.5]	Indigenous Media in Global Contexts
COMS 4317 [0.5]	Digital Media and Global Network Society

COMS 4337 [0.5]	Communication and Public Affairs Strategies	
COMS 4401 [0.5]	Global Internet Policy and Governance	
COMS 4403 [0.5]	Digital Media Industries	
COMS 4405 [0.5]	The Networked Self	
COMS 4406 [0.5]	Open Government and Communication	
COMS 4407 [0.5]	Communication and Critical Data Studies	
COMS 4408 [0.5]	Creative Work	
COMS 4410 [0.5]	Mobile Media	
COMS 4411 [0.5]	Algorithmic Culture	
COMS 4412 [0.5]	Game Studies	
COMS 4501 [0.5]	Digital Media Production	
COMS 4502 [0.5]	Storytelling in the Digital Age	
COMS 4503 [0.5]	Visualizing Social Media: Hashtags, keywords, & conversations	
COMS 4504 [0.5]	Engaging the Public: Stakeholders, participation & consultation	
COMS 4505 [0.5]	Professional Writing and Speaking	
COMS 4506 [0.5]	Event Management and Community Partnerships	
COMS 4602 [0.5]	Children, Youth and Media	
COMS 4603 [0.5]	Diaspora and Communication	
COMS 4604 [0.5]	Media, Gender and Sexuality	
COMS 4605 [0.5]	Media, Race and Ethnicity	
COMS 4606 [0.5]	Global Media and Popular Culture	
COMS 4607 [0.5]	Communication and Food	
COMS 4608 [0.5]	Sound Studies	
COMS 4800 [0.5]	Special Topic in Communication and Media Studies	
COMS 4908 [1.0]	Honours Research Essay	
C. Additional Requirements (5.0 credits)		
7.a. 0.5 credit from:		0.5
HIST 1301 [0.5]	Conflict and Change in Early Canadian History	
HIST 1302 [0.5]	Rethinking Modern Canadian History	
HIST 2301 [0.5]	Canadian Political History	
HIST 2304 [1.0]	Social and Cultural History of Canada (See Item 8 below)	
HIST 2311 [0.5]	Environmental History of Canada	
b. 0.5 credit from:		0.5
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	
INDG 2011 [0.5]	Contemporary Indigenous Studies	
8. Approved electives to make up a total of 20.0 credits. Students who take HIST 2304 to fulfill Item 7a will have 0.5 credits less to complete.		4.0
Total Credits		20.0

Media Production and Design B.M.P.D. Honours (20.0 credits)

A. Credits Included in the Major (12.0 credits)

1. 2.0 credits in:		2.0
ITEC 1005 [0.5]	Web Development	

ITEC 1100 [0.5]	Introduction to Interactive Media Design	
MPAD 1001 [0.5]	Introduction to Storytelling: The Context	
MPAD 1002 [0.5]	Introduction to Storytelling: The Practice	
2. 1.0 credits in:		1.0
ITEC 1401 [0.5] & ITEC 2401 [0.5]	Introduction to Scripting and Problem Solving Intermediate Scripting	
Or		
ITEC 1400 [0.5] & ITEC 2400 [0.5]	Introduction to Programming and Problem Solving Intermediate Programming	
3. 3.0 credits in:		3.0
ITEC 2100 [0.5]	Data Visualization	
MPAD 2001 [0.5]	Basics of Visual Communication I	
MPAD 2002 [0.5]	Basics of Visual Communication II	
MPAD 2003 [0.5]	Introductory Data Storytelling	
MPAD 2004 [0.5]	Writing for Media	
MPAD 2501 [0.5]	Media Law	
4. 3.0 credits in:		3.0
ITEC 3100 [0.5]	Immersive Storytelling	
MPAD 3001 [0.5]	Storytelling and Social Media	
MPAD 3002 [0.5]	Civic Engagement and Public Institutions I	
MPAD 3003 [0.5]	Civic Engagement and Public Institutions II: Minor Design Project	
MPAD 3300 [0.5]	Media Ethics in a Digital World	
MPAD 3501 [0.5]	Internet and Big Data Law	
5. 2.0 credits in:		2.0
MPAD 4000 [1.0]	Capstone Project	
MPAD 4001 [0.5]	Media Industries Now and Next	
MPAD 4200 [0.5]	Freelance Media Survival Skills	
6. 0.5 credit from:		0.5
MPAD 3000 [0.5]	Directed Studies	
MPAD 4300 [0.5]	Special Topic	
MPAD 4400 [0.5]	Directed Studies	
MPAD 4500 [0.5]	Special Topic	
MPAD 4501 [0.5]	Gender, Identity and Inequality	
MPAD 4502 [0.5]	Journalism and Conflict	
MPAD 4503 [0.5]	Journalism, Indigenous Peoples and Canada	
MPAD 4504 [0.5]	The Media and International Development	
7. 0.5 credit from:		0.5
ITEC 4012 [0.5]	Web Application Frameworks	
ITEC 4014 [0.5]	User Experience Design and Accessibility	
ITEC 4015 [0.5]	Digital Audio and Music	
ITEC 4016 [0.5]	Virtual and Augmented Reality	
ITEC 4019 [0.5]	Directing and Cinematography for Digital Storytelling	
8. 0.5 credit from:		0.5
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	
INDG 2011 [0.5]	Contemporary Indigenous Studies	

INDG 2012 [0.5]	Anishinaabe Studies
INDG 2013 [0.5]	Haudenosaunee Studies
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality
INDG 2709 [0.5]	Indigenous Drama
INDG 3001 [0.5]	Indigenous Governance
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy

B. Credits Not Included in the Major (7.5 credits)

9. 7.5 credits in free electives	7.5
Total Credits	20.0

Minor in News Media and Information (4.0 credits)

This Minor is open to all undergraduate degree students in programs other than Journalism.

Requirements:

1. 2.0 credits in:	2.0
JOUR 1003 [0.5]	Discovering Journalism: Traditional Tales to Tweets
JOUR 2003 [0.5]	Delivering Journalism: Innovators v. Imposters
JOUR 2501 [0.5]	Media Law
JOUR 3300 [0.5]	Media Ethics in a Digital World
2. 1.0 credit from:	1.0
JOUR 3401 [0.5]	Selected Topic in Journalism
JOUR 3402 [0.5]	Selected Topic in Journalism
JOUR 4001 [0.5]	Journalism Now - and Next
JOUR 4504 [0.5]	Investigating Journalism: The Media and International Development
MPAD 3002 [0.5]	Civic Engagement and Public Institutions I
MPAD 3501 [0.5]	Internet and Big Data Law
3. 1.0 credits from:	1.0
JOUR 2106 [0.5]	The Documentary
JOUR 3105 [0.5]	Questions of Documentary Practice
PHIL 2106 [0.5]	Information Ethics
PHIL 2901 [0.5]	Truth and Propaganda
PSCI 3108 [0.5]	Politics of Popular Culture
PSCI 3406 [0.5]	Public Affairs and Media Strategies
Total Credits	4.0

Regulations

In addition to the program requirements described here, students must satisfy the University regulations (see the *Academic Regulations of the University* section of this calendar).

Students should consult with the School when planning their program and selecting courses.

Note: students who already hold an undergraduate degree in another field are not eligible to apply for the B.J. (Honours) program. These students should consult the

information on the Master of Journalism or the Master of Arts in Communication in the Graduate Calendar.

Transfer into Second Year of B.J.

The School maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an Overall CGPA equivalent to 10.00 (A-) or better.

Transfer from B.J. to B.J.Hum.

A student who has completed the first year of the B.J. program may apply to transfer into the second year of the B.J.Hum. program, and will be accepted at the discretion of the School of Journalism and the College of Humanities. Students must normally have an Overall CGPA of 10.00 (A-) or higher. Transfer into higher years will not be considered.

Progression into 2000-Level Courses

Students may not continue into 2000-level JOUR courses unless the following minimum requirements are met:

- Successful completion of JOUR 1001
- Successful completion of JOUR 1002

Progression into 3000-Level Courses

Students may only continue into the 3000-level Journalism courses JOUR 3207, JOUR 3208, JOUR 3235, JOUR 3300 if they attain a minimum grade of C in each of the following: JOUR 2201, JOUR 2202, and JOUR 2501.

Progression into 4000-Level Courses

Students may only continue into the 4000-level Journalism production courses JOUR 4003, JOUR 4004, JOUR 4005 if they attain a minimum grade of C in each of the following: JOUR 3207, JOUR 3208, JOUR 3235, and JOUR 3300.

Graduation Requirements

In addition to the graduation requirements of the Faculty, a candidate for the degree of Bachelor of Journalism (Honours) must have:

1. an Overall CGPA and Major CGPA of at least 6.50,
2. a minimum grade of C in each of the 2000-level and above JOUR courses required in the Major;
3. the recommendation of the School of Journalism and Communication for graduation.

Prohibited Courses

Courses below the 1000-level may not be used for credit in Journalism programs.

Academic Continuation Evaluation for Bachelor of Journalism

Students in B.J. are Honours students.

Students in the Bachelor of Journalism follow the Academic Continuation Evaluation (ACE) regulations governing Honours programs as described in Section 3.2 of the *Academic Regulations of the University*, with the following addition:

- Students with at least 15.5 credit attempts and who do not meet the graduation requirements of

an Overall CGPA of 6.50 and a Major CGPA of 6.50 will be required to leave the program with the decision *Continue in Alternate* (CA).

Academic Continuation Evaluation for Bachelor of Journalism and Humanities

Students in the Bachelor of Journalism and Humanities degree follow the Academic Continuation Evaluation (ACE) regulations described in Section 3.2 of the *Academic Regulations of the University* with the following additions and amendments.

The Bachelor of Journalism and Humanities degree defines an Overall CGPA, a Journalism Major CGPA, and a Humanities Core CGPA.

HUMANITIES CORE COURSES

HUMS 1000 [1.0]	Myth and Symbol
HUMS 2000 [1.0]	Reason and Revelation
HUMS 3000 [1.0]	Culture and Imagination
HUMS 4000 [1.0]	Politics, Modernity and the Common Good

Whenever the student is assessed in ACE, Bachelor of Journalism and Humanities students are evaluated on the basis of their Overall CGPA. The Humanities Core CGPA is assessed only at the end of each winter term.

1. A student is required to leave the program if:
 - a. the student was on *Academic Warning* (AW) and does not achieve a decision of *Eligible to Continue* (EC) at the next Academic Continuation Evaluation;
 - b. the student's Overall CGPA is less than 1.00;
 - c. the student's Humanities Core CGPA is less than 6.00 when assessed.
2. Students with between 5.5 and 15 credit attempts who do not maintain an Overall CGPA of 4.00 and a Humanities Core CGPA of 6.5, but who have an Overall CGPA of at least 1.00 and a Humanities Core of at least 6.00, will be placed on *Academic Warning* (AW). Students with at least 15.5 credit attempts and who do not meet the graduation requirements of an Overall CGPA of 6.50, a Journalism Major CGPA of 6.50, and a Humanities Core CGPA of 6.50 will be required to leave the program.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by

program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.J. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include 4U English. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement. The Bachelor of Journalism with a Concentration in Health Sciences must also include one 4U Math, and either 4U Chemistry or 4U Biology.

Note: Students who already hold an undergraduate degree in another field are not eligible to apply for the B.J. (Honours) program. These students should consult the information on the Master of Journalism or the Master of Arts in Communication in the Faculty of Graduate Studies and Research Calendar.

Advanced Standing

The School also maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an overall CGPA of 9.00 (B+) or higher.

Transferring from the B.J.Hum. to the B.J. or B.Hum. Degree

A student who wishes to transfer from the B.J.Hum. to the B.J. or the B.Hum. may apply through Admissions, and will

be accepted if, upon entry to the new program, they would be *Eligible to Continue* (EC) in the new degree program.

Journalism (JOUR) Courses

JOUR 1001 [0.5 credit]

Foundations: Journalism in Context

This course charts a history of the fourth estate in the West from the invention of the printing press to the ascendance of networked digital communication, focusing on the political, economic and technological contexts that have shaped the news media as institutions and industries.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

JOUR 1002 [0.5 credit]

Foundations: Practicing Journalism in a Diverse Society

The course introduces students to the concepts, issues and challenges in the contemporary Canadian media environment that will shape their professional role as practicing journalists. It will also provide students with an initial opportunity to practice some basic journalistic skills.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

JOUR 1003 [0.5 credit]

Discovering Journalism: Traditional Tales to Tweets

Journalism's evolution as community creator and guardian of democracy; its greatest scoops and worst misdeeds. From ancient news-sharing to 21st-century expression in blogs, tweets and investigative masterpieces, this course surveys ethical, political and economic contexts of journalism. Not open to Journalism majors.

Lecture three hours a week.

JOUR 1004 [0.5 credit]

Special Topic

Examination of a topic in journalism not covered in depth in other courses.

Lecture two hours a week, discussion one hour a week.

JOUR 2003 [0.5 credit]

Delivering Journalism: Innovators v. Imposters

Activists, imposters and innovators increasingly crowd in on traditional journalism's role of presenting reliable news and fair discussion. How is public awareness now shaped – and misshaped – and how must journalism reshape, update and defend its borders to serve communities better?.

Prerequisite(s): JOUR 1001, JOUR 1002, JOUR 1003, or permission of the School of Journalism and Communication.

Lecture and discussion three hours a week.

JOUR 2106 [0.5 credit]

The Documentary

Examination of the work of individual film makers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered.

Also listed as FILM 2106.

Precludes additional credit for JOUR 2105, FILM 2105.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

JOUR 2201 [1.0 credit]

Fundamentals of Reporting

Introduction to the techniques journalists use to gather information quickly, accurately and ethically, and to present reports and features in clear, engaging ways. Newsroom exercises provide experience in reporting, writing, editing and using digital tools, including photography and social media.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.

Lectures, discussion and practicum six hours a week.

JOUR 2202 [0.5 credit]

Digital Journalism Toolkit

An introduction to the digital tools and social media journalists use to gather, verify and present material to audiences. Lab exercises provide experience producing photographs, audio, and video for journalistic storytelling and the use of social media tools and platforms for reporting and publishing.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.

Students must be enrolled in this course concurrently with JOUR 2201.

Lectures and lab three hours a week.

JOUR 2501 [0.5 credit]

Media Law

A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as COMS 2501, MPAD 2501.

Precludes additional credit for COMM 2501 (no longer offered).

Prerequisite(s): JOUR 1001, JOUR 1002, COMS 1001, COMS 1002, or JOUR 1003 and enrollment in the Minor in News Media and Information, or enrollment in the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

JOUR 3105 [0.5 credit]**Questions of Documentary Practice**

Theoretical implications of documentary film and documentary television practice.

Also listed as FILM 3105.

Prerequisite(s): 1.0 credit in Film Studies at the 2000-level, or permission of the School.

JOUR 3207 [0.5 credit]**Audio Journalism**

In this workshop students will build on the principles and practices of audio journalism to produce stories and audio in various formats suitable for radio and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs six hours a week.

JOUR 3208 [0.5 credit]**Video Journalism**

In this workshop students will build on the principles and practices of video journalism to produce stories and video in various formats suitable for television and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs six hours a week.

JOUR 3225 [0.5 credit]**Reporting in Depth**

Long-form journalistic writing skills development; techniques for thorough investigation of timely public issues. Study of outstanding feature and investigative writing examples. Students will pursue their own reporting projects.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 3205 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and practicum three hours a week.

JOUR 3235 [0.5 credit]**Digital Journalism**

Further development of digital journalism skills. Students will produce journalism for online audiences using formats including written and spoken language, still and moving images.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 3205 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs three hours a week.

JOUR 3300 [0.5 credit]**Media Ethics in a Digital World**

Ethical issues related to production and dissemination of news and other forms of content as they relate to digital environments. Different approaches to ethical decision-making and their application in contemporary settings.

Also listed as MPAD 3300.

Precludes additional credit for JOUR 3215 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202 and JOUR 2501 with a grade of C or higher in each, or JOUR 1003, JOUR 2003 and JOUR 2501 with a grade of C or higher in each and enrollment in the Minor in News Media and Information.

Lectures three hours a week.

JOUR 3400 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3401 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3402 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3407 [0.5 credit]**Comparative Media Studies**

The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.

Also listed as COMS 3407.

Precludes additional credit for COMM 3407 (no longer offered).

Prerequisite(s): third-year standing in B.J. Hons. or permission of the School of Journalism and Communication.

Lectures three hours a week.

JOUR 4001 [0.5 credit]**Journalism Now - and Next**

Changes occurring in the media, in the public's relationship with the media and how journalists and news organizations respond. Practical issues and challenges in the professional life of a journalist.

Also listed as MPAD 4001.

Precludes additional credit for JOUR 4000 (no longer offered).

Prerequisite(s): fourth-year standing in the Bachelor of Journalism or in the Bachelor of Media Production and Design, or fourth-year standing and enrollment in the Minor in News Media and Information, or fourth-year standing in the Strategic Public Opinion stream of the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management.

Lectures and discussion three hours a week.

JOUR 4003 [0.5 credit]**The Digital Hub: Advanced Multimedia**

A workshop designed to give students instruction in digital reporting and publishing as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3235 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5003, for which additional credit is precluded.

Workshops averaging eight hours a week.

JOUR 4004 [0.5 credit]**The Digital Hub: Advanced Audio**

A workshop designed to give students instruction in audio journalism as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4206 (no longer offered).

Prerequisite(s): JOUR 3207 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5004, for which additional credit is precluded.

Workshops averaging eight hours per week.

JOUR 4005 [0.5 credit]**The Digital Hub: Advanced Video**

A workshop designed to give students instruction in video journalism as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4207 (no longer offered).

Prerequisite(s): JOUR 3208 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5005, for which additional credit is precluded.

Workshops averaging eight hours a week.

JOUR 4100 [0.5 credit]**Special Topic**

Examination of a topic in journalism not covered in depth in other courses. Seminar three hours a week.

Seminar three hours a week.

JOUR 4101 [0.5 credit]**Special Topic**

An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year.

Seminar three hours a week.

JOUR 4300 [0.5 credit]**Specialized Journalism: Special Topic**

Examination of a topic not covered in depth in other specialized journalism courses. Topics may vary from year to year. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.

Also listed as MPAD 4300.

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5300, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4301 [0.5 credit]**Specialized Journalism: Business and the Markets**

Core skills development for business journalism: reading financial documents, covering activities of corporations, functioning of stock and other markets, trade policy and the broader economy, focus on contemporary business news and local publicly-traded companies. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5301, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4302 [0.5 credit]**Specialized Journalism: Business and Canadian Society**

The intersection between business and public policy, from climate change to taxation, pensions, labour and corporate social responsibility. What business does and how the media covers it. Emphasis on explanatory/analytical reporting, production of a related data project as an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5302, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4303 [0.5 credit]**Specialized Journalism: Health and Science**

The culture of health science research and major trends; key challenges confronting researchers and health science journalists around the world. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5303, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4304 [0.5 credit]**Specialized Journalism: Environment and Science**

Major trends and research culture in climate and environmental sciences, focusing on key global concerns. Issues facing researchers and journalists. Focus on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5304, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4305 [0.5 credit]**Specialized Journalism: Canada and the U.S.**

Exploration of the unique issues in Canada-U.S. relations, from diplomacy to trade. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5315, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4306 [0.5 credit]**Specialized Journalism: Canada and the World**

Diplomacy, war, terrorism, migration, the international economy, development and other issues of interest to journalists who want to write about Canada and international affairs. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5306, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4308 [0.5 credit]**Specialized Journalism: Sports and Sport Culture**

Workshop equipping students with the skills to move beyond the clichés of sports writing and live event coverage. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5308, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4309 [0.5 credit]**Specialized Journalism: Arts and Culture**

Students are introduced to arts and culture journalism, exploring issues and trends that are key to understanding and covering the arts and related cultural policy in Canada. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5309, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4310 [0.5 credit]**Specialized Journalism: Justice and the Law**

Areas of law that journalists may encounter along with a practical explanation of how law works. Students gain the language and tools needed to successfully analyze and write about legal issues. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5310, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4311 [0.5 credit]**Specialized Journalism: Justice and The Supreme Court**

Examination of the Supreme Court of Canada, and the role of journalists in covering it. Students attend hearings and gain insight into the court's role in the making and shaping of Canada. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5311, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4400 [0.5 credit]**Professional Skills: Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.

Seminar three hours a week.

JOUR 4401 [0.5 credit]**Professional Skills: Data Storytelling**

Instruction in telling stories from data. Focus on searching for, analyzing and mapping data, turning numbers into powerful narratives.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4402 [0.5 credit]**Professional Skills: Longform Writing**

Instruction in longform story production. Focus on researching and writing, including the art and craft of writing for magazines.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4403 [0.5 credit]**Professional Skills: Strategic Communication**

Workshop pairing student teams with non-profit groups that are in need of strategic communication advice.

Instruction in planning and implementation.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Also offered at the graduate level, with different requirements, as JOUR 5508, for which additional credit is precluded.

Lecture and practicum three hours a week.

JOUR 4404 [0.5 credit]**Professional Skills: Freelancing for Media Professionals**

Workshop preparing students to compete in a market that values the skills and mindset of entrepreneurial media workers.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4500 [0.5 credit]**Investigating Journalism: Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Also listed as MPAD 4500.

Prerequisite(s): third- or fourth-year standing in B.J.

Honours or permission of the School.

Seminar three hours a week.

JOUR 4501 [0.5 credit]**Investigating Journalism: Gender, Identity and Inequality**

How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis. Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.

Includes: Experiential Learning Activity

Also listed as MPAD 4501.

Precludes additional credit for JOUR 4307 (no longer offered).

Prerequisite(s): third- or fourth-year standing in B.J. Hons. or permission of the School.

Seminar three hours a week.

JOUR 4502 [0.5 credit]**Investigating Journalism: Journalism and Conflict**

For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.

Includes: Experiential Learning Activity

Also listed as MPAD 4502.

Prerequisite(s): fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4503 [0.5 credit]**Investigating Journalism: Journalism, Indigenous Peoples and Canada**

Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous peoples in the era of reconciliation.

Includes: Experiential Learning Activity

Also listed as MPAD 4503.

Prerequisite(s): third- or fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4504 [0.5 credit]**Investigating Journalism: The Media and International Development**

A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda?.

Includes: Experiential Learning Activity

Also listed as MPAD 4504.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 4505 [1.0 credit]**Investigating Journalism: The Power and Politics of Government**

In-depth exploration of Canada's government, public policy and politics; parliamentary debate and committee hearings. Explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4201 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4900 [1.0 credit]**Honours Tutorial**

Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism.

Prerequisite(s): fourth-year B.J. (Honours) standing.

JOUR 4999 [0.0 credit]**Science Communication Certificate Professional Development Workshop**

A one-day workshop providing practical skills development for becoming an effective science communicator. Topics for discussion will include defining the audience and framing of information, reviews of effective science communication, career opportunities for science communicators, and one-to-one analysis of participants writing skills. Graded SAT/UNS.

Includes: Experiential Learning Activity

Also listed as ISAP 4999.

Prerequisite(s): This course is restricted to students enrolled in the Certificate of Science Communication, and who have completed at least 2.0 credits towards the certificate, including one of COMS 2500 or ISAP 3003.

A one-day workshop

Journalism and Humanities

This section presents the requirements for programs in:

- Bachelor of Journalism and Humanities B.J. Hum. Honours

Program Requirements**Intermediate Language Requirement**

1. GREK 2200 and GREK 2201
2. LATN 2200 and LATN 2201
3. FREN 1100 or FREN 2100
4. GERM 2010 and GERM 2020, or GERM 2110
5. ITAL 2010 and ITAL 2020, or ITAL 2110
6. RELI 2010
7. RUSS 2010 and RUSS 2020
8. SPAN 2010 and SPAN 2020, or SPAN 2110

Bachelor of Journalism and Humanities B.J. Hum. Honours (20.0 credits)

Note: students must enrol in this degree in their first year of study.

1. 1.0 credit in:	1.0
JOUR 1001 [0.5] Foundations: Journalism in Context	
JOUR 1002 [0.5] Foundations: Practicing Journalism in a Diverse Society	
2. 2.0 credits in:	2.0
JOUR 2201 [1.0] Fundamentals of Reporting	
JOUR 2202 [0.5] Digital Journalism Toolkit	
JOUR 2501 [0.5] Media Law	
3. 2.5 credits in:	2.5
JOUR 3207 [0.5] Audio Journalism	
JOUR 3208 [0.5] Video Journalism	
JOUR 3225 [0.5] Reporting in Depth	
JOUR 3235 [0.5] Digital Journalism	
JOUR 3300 [0.5] Media Ethics in a Digital World	
4. 0.5 credit in:	0.5
JOUR 4001 [0.5] Journalism Now - and Next	
5. 2.0 credits from: Journalism Publications and/or Specialized Journalism and/or Professional Skills and/or Investigating Journalism. (At least 0.5 credit must be taken from Journalism Publications courses and at least 0.5 credit must be taken from the Specialized Journalism courses.)	2.0
Journalism Publications	
JOUR 4003 [0.5] The Digital Hub: Advanced Multimedia	
JOUR 4004 [0.5] The Digital Hub: Advanced Audio	
JOUR 4005 [0.5] The Digital Hub: Advanced Video	
Specialized Journalism	
JOUR 4300 [0.5] Specialized Journalism: Special Topic	
JOUR 4301 [0.5] Specialized Journalism: Business and the Markets	
JOUR 4302 [0.5] Specialized Journalism: Business and Canadian Society	
JOUR 4303 [0.5] Specialized Journalism: Health and Science	
JOUR 4304 [0.5] Specialized Journalism: Environment and Science	
JOUR 4305 [0.5] Specialized Journalism: Canada and the U.S.	
JOUR 4306 [0.5] Specialized Journalism: Canada and the World	
JOUR 4308 [0.5] Specialized Journalism: Sports and Sport Culture	
JOUR 4309 [0.5] Specialized Journalism: Arts and Culture	
JOUR 4310 [0.5] Specialized Journalism: Justice and the Law	
JOUR 4311 [0.5] Specialized Journalism: Justice and The Supreme Court	
Professional Skills	
JOUR 4400 [0.5] Professional Skills: Special Topic	
JOUR 4401 [0.5] Professional Skills: Data Storytelling	
JOUR 4402 [0.5] Professional Skills: Longform Writing	

JOUR 4403 [0.5] Professional Skills: Strategic Communication	
JOUR 4404 [0.5] Professional Skills: Freelancing for Media Professionals	
Investigating Journalism	
JOUR 4500 [0.5] Investigating Journalism: Special Topic	
JOUR 4501 [0.5] Investigating Journalism: Gender, Identity and Inequality	
JOUR 4502 [0.5] Investigating Journalism: Journalism and Conflict	
JOUR 4503 [0.5] Investigating Journalism: Journalism, Indigenous Peoples and Canada	
JOUR 4504 [0.5] Investigating Journalism: The Media and International Development	
JOUR 4505 [1.0] Investigating Journalism: The Power and Politics of Government	
6.a. 0.5 credit from:	0.5
HIST 1301 [0.5] Conflict and Change in Early Canadian History	
HIST 1302 [0.5] Rethinking Modern Canadian History	
HIST 2301 [0.5] Canadian Political History	
HIST 2304 [1.0] Social and Cultural History of Canada (see Note 3 below)	
HIST 2311 [0.5] Environmental History of Canada	
b. 0.5 credit from:	0.5
INDG 1010 [0.5] Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5] Introduction to Indigenous-Settler Encounters	
INDG 2011 [0.5] Contemporary Indigenous Studies	
7. 4.0 credits in the Humanities Core:	4.0
HUMS 1000 [1.0] Myth and Symbol	
HUMS 2000 [1.0] Reason and Revelation	
HUMS 3000 [1.0] Culture and Imagination	
HUMS 4000 [1.0] Politics, Modernity and the Common Good	
8. 1.5 credits in:	1.5
HUMS 1200 [0.5] Humanities and Classical Civilisation	
HUMS 3200 [1.0] European Literature	
9. 1.0 credit in:	1.0
HUMS 2101 [0.5] Art from Antiquity to the Medieval & HUMS 2102 [0.5] World Modern European Art 1527-2000	
or	
HUMS 3102 [0.5] Western Music 1000-1850 & HUMS 3103 [0.5] Western Music 1850-2000	
10. 1.5 credits in:	1.5
RELI 2710 [1.0] Maccabees to Muhammad	
and	
CLCV 2008/ ENGL 2012 [0.5] Greek and Roman Epic	
or	
CLCV 2010/ ENGL 2605 [0.5] Greek and Roman Drama	
11. 0.5 credit from:	0.5

HUMS 4103 [0.5]	Science in the Modern World	
HUMS 4500 [0.5]	Modern Intellectual History	
12. 0.5 credit from:		0.5
HUMS 4901 [0.5]	Research Seminar: Antiquity to the Middle Ages	
HUMS 4902 [0.5]	Research Seminar: Renaissance to Enlightenment	
HUMS 4903 [0.5]	Research Seminar: Romanticism to the Present	
HUMS 4904 [0.5]	Research Seminar: Non-Western Traditions	
or		
0.5 credit in JOUR at the 4000 level		
13. 1.0 credit in:		1.0
RELI 1731 [0.5]	Varieties of Religious Experience	
& HUMS 1005 [0.5]	Early Human Cultures	
or		
1.0 credit in a beginner's level language		
14. 1.0 credit fulfilling the language requirement (see Note 3 below)		1.0
or		
1.0 credit in approved electives		

Total Credits **20.0**

Notes

- For **Item 9** above, students who transfer into the B.J. Hum. may use up to 1.0 credit of any previously completed art and/or music courses (with the exception of advanced placement courses). Students normally take HUMS 2101 and HUMS 2102, or HUMS 3102 and HUMS 3103. Other combinations of these requirements may be allowed at the discretion of the College of the Humanities.
- For **Items 13** and **14** above, students who must take a beginner's level prerequisite to their intermediate language requirement should do so in place of RELI 1731 and HUMS 1005. Students who are already able to demonstrate a proficiency in a second language at an intermediate level may have the requirement waived, and in that case may be required to take an additional elective credit at the 2000-level or above in order to bring their total number of credits up to the required 20.0.
- Students fulfilling the language requirement are not permitted to register in HIST 2304 to fulfill the requirement for **Item 6a**.

Regulations

In addition to the requirements described here, students must satisfy the University regulations (see the *Academic Regulations of the University* section of this calendar).

Students should consult with the School of Journalism and the College of Humanities when planning their program and selecting courses.

Progression into Second Year

Students may not continue into 2000-level or higher JOUR courses unless the following minimum requirements are met:

- Successful completion of JOUR 1001
- Successful completion of JOUR 1002

General Prerequisites

- Students may only continue into the 3000-level Journalism courses JOUR 3207, JOUR 3208, JOUR 3235, JOUR 3300 if they attain a minimum grade of C in each of the following: JOUR 2201, JOUR 2202, and JOUR 2501.
- Students may only continue into the 4000-level Journalism production courses JOUR 4003, JOUR 4004, JOUR 4005 if they attain a minimum grade of C in each of the following: JOUR 3207, JOUR 3208, JOUR 3235, and JOUR 3300.

Graduation Requirements

In addition to the graduation requirements of the University, a graduation candidate for the degree of Bachelor of Journalism and Humanities (Honours) must present:

- a Core Humanities CGPA of at least 6.50, and
- a minimum grade of C in each of the 2000-level and above JOUR courses presented for the degree, and
- an overall CGPA of 6.50 or higher.

Requirement for Full Time Study

Students in second and higher years in the Bachelor of Journalism and Humanities program must complete a minimum of 4.0 credits by the end of the summer session. The School of Journalism and the College of the Humanities may permit students to study abroad for a year while remaining registered in the program. For those students permitted to study abroad, Carleton credits commensurate to studies taken abroad will be determined by the School of Journalism and the College of the Humanities and awarded towards the student's degree. In exceptional circumstances (usually financial need or sickness), the School of Journalism and the College of the Humanities may also permit students to take a leave of absence for one year while remaining registered in the program.

Prohibited Courses

Courses below the 1000 level may not be used for credit in the Bachelor of Journalism and Humanities program.

Academic Continuation Evaluation for Bachelor of Journalism and Humanities

Students in the Bachelor of Journalism and Humanities degree follow the Academic Continuation Evaluation (ACE) regulations described in Section 3.2 of the *Academic Regulations of the University* with the following additions and amendments.

The Bachelor of Journalism and Humanities degree defines an Overall CGPA, a Journalism Major CGPA, and a Humanities Core CGPA.

HUMANITIES CORE COURSES

HUMS 1000 [1.0]	Myth and Symbol
HUMS 2000 [1.0]	Reason and Revelation
HUMS 3000 [1.0]	Culture and Imagination

Whenever the student is assessed in ACE, Bachelor of Journalism and Humanities students are evaluated on the basis of their Overall CGPA. The Humanities Core CGPA is assessed only at the end of each winter term.

1. A student is required to leave the program if:
 - a. the student was on *Academic Warning (AW)* and does not achieve a decision of *Eligible to Continue (EC)* at the next Academic Continuation Evaluation;
 - b. the student's Overall CGPA is less than 1.00;
 - c. the student's Humanities Core CGPA is less than 6.00 when assessed.
2. Students with between 5.5 and 15 credit attempts who do not maintain an Overall CGPA of 4.00 and a Humanities Core CGPA of 6.5, but who have an Overall CGPA of at least 1.00 and a Humanities Core of at least 6.00, will be placed on *Academic Warning (AW)*. Students with at least 15.5 credit attempts and who do not meet the graduation requirements of an Overall CGPA of 6.50, a Journalism Major CGPA of 6.50, and a Humanities Core CGPA of 6.50 will be required to leave the program.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also

require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Journalism and Humanities (B.J.Hum.) (Honours)

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include 4U English. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Note: students who already hold an undergraduate degree are not eligible to apply for the B.J.Hum. (Honours).

Advanced Standing/Transfer into the Second Year of the B.J.Hum.

The school maintains a number of places in second year for students who wish to transfer from Carleton or elsewhere. Normally, offers are made to students with an Overall CGPA equivalent to 9.00 (B+) or higher. Transfer also requires a Core Humanities CGPA of at least 6.00. An additional year may be necessary for transfer students to complete their degree requirements. Transfers into higher years will not be considered.

Humanities (HUMS) Courses

HUMS 1000 [1.0 credit]

Myth and Symbol

Recurring symbols in myth, epic and ritual representing the relation between the sacred and the profane, the origin of the cosmos, the basis of community, and formative human experiences. Primary sources drawn from ancient India and China, Mesopotamia, the Hebrew Bible, and Indigenous cultures.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 1005 [0.5 credit]

Early Human Cultures

Cultural experiences of small scale societies, including kinship, rituals, magic, social structure, and subsistence. Reading may include the works of classic anthropologists such as Maine, Tylor, Morgan, and Boas.

Precludes additional credit for ANTH 1001 and ANTH 1003.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 1200 [0.5 credit]**Humanities and Classical Civilisation**

The ideas which animated ancient Greek and Roman civilisation and which influenced later western cultural movements through a reading of literary, historical, and philosophical works. Authors include Homer, Herodotus, Thucydides, the Greek Tragedians, Plato, Vergil, and Cicero.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 1500 [0.5 credit]**Introduction to the Humanities: Five Books that Changed the World**

A reading-intensive course on five influential books from Antiquity to the present day. Works may include the Bible, the Bhagavad Gita, Homer's *Odyssey*, Plato's *Republic*, Dante's *Inferno*, Machiavelli's *The Prince*, Shakespeare's *Hamlet*, Mary Shelley's *Frankenstein*, Nietzsche's *Beyond Good and Evil*, Marx's *Communist Manifesto*.

Prerequisite(s): enrolment in a degree program in the Faculty of Arts and Social Sciences, or the Faculty of Public Affairs. Students enrolled in the BHum. program are not eligible to register in this course.

Lecture three hours per week.

HUMS 2000 [1.0 credit]**Reason and Revelation**

The origins of philosophy in ancient Greece and its pursuit in the medieval West, with special attention to knowledge, happiness, and love. Readings include works by Plato, Aristotle, Plotinus, Augustine, Boethius, Aquinas, and Dante.

Prerequisite(s): HUMS 1000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 2101 [0.5 credit]**Art from Antiquity to the Medieval World**

A chronological and thematic survey of the Arts from the earliest times to ca. 1400.

Precludes additional credit for HUMS 4101 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 2102 [0.5 credit]**Modern European Art 1527-2000**

A chronological and thematic survey of the Arts from the sixteenth to the twenty-first century.

Precludes additional credit for HUMS 4101 (no longer offered) and HUMS 3101 (no longer offered).

Prerequisite(s): HUMS 2101 and restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 3000 [1.0 credit]**Culture and Imagination**

Major forms of literary, artistic, and philosophical expression from 1500-1800. Sources drawn from renaissance humanism, reformation theology, enlightenment and romantic philosophy.

Prerequisite(s): HUMS 2000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 3102 [0.5 credit]**Western Music 1000-1850**

Introduction to basic theory, harmony, history and interpretation of Western music including the Medieval, Renaissance, Baroque, Classical and early Romantic periods.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4102 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 3103 [0.5 credit]**Western Music 1850-2000**

Western music from the mid-nineteenth century to the present with emphasis on the seminal contributions of Liszt, Wagner, Mahler, Debussy, Stravinsky, Schönberg and others.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4102 (no longer offered).

Prerequisite(s): HUMS 3102 and restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 3200 [1.0 credit]**European Literature**

Major movements and works from Dante's *Divine Comedy* through Voltaire's *Candide*. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.

Also listed as ENGL 3201.

Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program. English students should have third-year standing with a GPA of B or above.

Lectures three hours a week.

HUMS 3500 [0.5 credit]**Ancient and Medieval Intellectual History**

Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from Archaic Greece to the High Middle Ages.

Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.

Lectures three hours a week.

HUMS 3550 [0.5 credit]**Renaissance and Early Modern Intellectual History**

Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from the Early Renaissance to 1800.

Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.

Lectures three hours a week.

HUMS 3800 [0.5 credit]**Humanities in Context**

Designed for students studying humanities, this travel course explores art, literature, politics, philosophy, architecture, religions, and cultures in their historical and contemporary contexts in a particular geographic locale. Travel destinations and themes vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): 2.0 credits in HUMS and permission of the department. Permission of the unit is required to repeat this course.

Hours to be arranged.

HUMS 4000 [1.0 credit]**Politics, Modernity and the Common Good**

Modern and post-modern ways of thinking and doing, including revolutionary new ideas in politics, philosophy, culture, economics, and international relations. Thinkers considered include Arendt, Foucault, Hegel, Heidegger, Hobbes, Kant, Marx, Nietzsche, Polanyi, Rousseau, Said, and Taylor.

Includes: Experiential Learning Activity

Prerequisite(s): HUMS3000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 4001 [0.5 credit]**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

HUMS 4002 [0.5 credit]**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program and Good Standing in the program.

HUMS 4103 [0.5 credit]**Science in the Modern World**

An introduction to the major scientific ideas of our time (such as Big Bang theory, molecular genetics, evolution, atomic structure), and the impact of technology on society (e.g. global warming, pollution, genetically modified foods, viral infections).

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4100 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 4500 [0.5 credit]**Modern Intellectual History**

Examination of some of the major ideas and ideologies from 1800 to the present, including romanticism, liberalism, nationalism, symbolism, socialism, Freudianism, communism, feminism, and postmodernism.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4104.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 4901 [0.5 credit]**Research Seminar: Antiquity to the Middle Ages**

An interdisciplinary seminar on a selected topic in the humanities from Antiquity to the Middle Ages. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4902 [0.5 credit]**Research Seminar: Renaissance to Enlightenment**

An interdisciplinary seminar on a selected topic in the humanities from the Renaissance to the Enlightenment. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4903 [0.5 credit]**Research Seminar: Romanticism to the Present**

An interdisciplinary seminar on a selected topic in the humanities from Romanticism to the present. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4904 [0.5 credit]**Research Seminar: Non-Western Traditions**

An interdisciplinary seminar on a selected topic in the humanities as expressed in aboriginal and Non-Western cultures. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

Journalism (JOUR) Courses**JOUR 1001 [0.5 credit]****Foundations: Journalism in Context**

This course charts a history of the fourth estate in the West from the invention of the printing press to the ascendance of networked digital communication, focusing on the political, economic and technological contexts that have shaped the news media as institutions and industries.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

JOUR 1002 [0.5 credit]**Foundations: Practicing Journalism in a Diverse Society**

The course introduces students to the concepts, issues and challenges in the contemporary Canadian media environment that will shape their professional role as practicing journalists. It will also provide students with an initial opportunity to practice some basic journalistic skills.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

JOUR 1003 [0.5 credit]**Discovering Journalism: Traditional Tales to Tweets**

Journalism's evolution as community creator and guardian of democracy; its greatest scoops and worst misdeeds.

From ancient news-sharing to 21st-century expression in blogs, tweets and investigative masterpieces, this course surveys ethical, political and economic contexts of journalism. Not open to Journalism majors.

Lecture three hours a week.

JOUR 1004 [0.5 credit]**Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Lecture two hours a week, discussion one hour a week.

JOUR 2003 [0.5 credit]**Delivering Journalism: Innovators v. Imposters**

Activists, imposters and innovators increasingly crowd in on traditional journalism's role of presenting reliable news and fair discussion. How is public awareness now shaped – and misshaped – and how must journalism reshape, update and defend its borders to serve communities better?

Prerequisite(s): JOUR 1001, JOUR 1002, JOUR 1003, or permission of the School of Journalism and Communication.

Lecture and discussion three hours a week.

JOUR 2106 [0.5 credit]**The Documentary**

Examination of the work of individual film makers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered.

Also listed as FILM 2106.

Precludes additional credit for JOUR 2105, FILM 2105.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

JOUR 2201 [1.0 credit]**Fundamentals of Reporting**

Introduction to the techniques journalists use to gather information quickly, accurately and ethically, and to present reports and features in clear, engaging ways. Newsroom exercises provide experience in reporting, writing, editing and using digital tools, including photography and social media.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.

Lectures, discussion and practicum six hours a week.

JOUR 2202 [0.5 credit]**Digital Journalism Toolkit**

An introduction to the digital tools and social media journalists use to gather, verify and present material to audiences. Lab exercises provide experience producing photographs, audio, and video for journalistic storytelling and the use of social media tools and platforms for reporting and publishing.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.

Students must be enrolled in this course concurrently with JOUR 2201.

Lectures and lab three hours a week.

JOUR 2501 [0.5 credit]**Media Law**

A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as COMS 2501, MPAD 2501.

Precludes additional credit for COMM 2501 (no longer offered).

Prerequisite(s): JOUR 1001, JOUR 1002, COMS 1001, COMS 1002, or JOUR 1003 and enrollment in the Minor in News Media and Information, or enrollment in the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

JOUR 3105 [0.5 credit]**Questions of Documentary Practice**

Theoretical implications of documentary film and documentary television practice.

Also listed as FILM 3105.

Prerequisite(s): 1.0 credit in Film Studies at the 2000-level, or permission of the School.

JOUR 3207 [0.5 credit]**Audio Journalism**

In this workshop students will build on the principles and practices of audio journalism to produce stories and audio in various formats suitable for radio and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs six hours a week.

JOUR 3208 [0.5 credit]**Video Journalism**

In this workshop students will build on the principles and practices of video journalism to produce stories and video in various formats suitable for television and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs six hours a week.

JOUR 3225 [0.5 credit]**Reporting in Depth**

Long-form journalistic writing skills development; techniques for thorough investigation of timely public issues. Study of outstanding feature and investigative writing examples. Students will pursue their own reporting projects.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 3205 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and practicum three hours a week.

JOUR 3235 [0.5 credit]**Digital Journalism**

Further development of digital journalism skills. Students will produce journalism for online audiences using formats including written and spoken language, still and moving images.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 3205 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs three hours a week.

JOUR 3300 [0.5 credit]**Media Ethics in a Digital World**

Ethical issues related to production and dissemination of news and other forms of content as they relate to digital environments. Different approaches to ethical decision-making and their application in contemporary settings. Also listed as MPAD 3300.

Precludes additional credit for JOUR 3215 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202 and JOUR 2501 with a grade of C or higher in each, or JOUR 1003, JOUR 2003 and JOUR 2501 with a grade of C or higher in each and enrollment in the Minor in News Media and Information.

Lectures three hours a week.

JOUR 3400 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3401 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3402 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3407 [0.5 credit]**Comparative Media Studies**

The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.

Also listed as COMS 3407.

Precludes additional credit for COMM 3407 (no longer offered).

Prerequisite(s): third-year standing in B.J. Hons. or permission of the School of Journalism and Communication.

Lectures three hours a week.

JOUR 4001 [0.5 credit]**Journalism Now - and Next**

Changes occurring in the media, in the public's relationship with the media and how journalists and news organizations respond. Practical issues and challenges in the professional life of a journalist.

Also listed as MPAD 4001.

Precludes additional credit for JOUR 4000 (no longer offered).

Prerequisite(s): fourth-year standing in the Bachelor of Journalism or in the Bachelor of Media Production and Design, or fourth-year standing and enrollment in the Minor in News Media and Information, or fourth-year standing in the Strategic Public Opinion stream of the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management.

Lectures and discussion three hours a week.

JOUR 4003 [0.5 credit]**The Digital Hub: Advanced Multimedia**

A workshop designed to give students instruction in digital reporting and publishing as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3235 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5003, for which additional credit is precluded.

Workshops averaging eight hours a week.

JOUR 4004 [0.5 credit]**The Digital Hub: Advanced Audio**

A workshop designed to give students instruction in audio journalism as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4206 (no longer offered).

Prerequisite(s): JOUR 3207 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5004, for which additional credit is precluded.

Workshops averaging eight hours per week.

JOUR 4005 [0.5 credit]**The Digital Hub: Advanced Video**

A workshop designed to give students instruction in video journalism as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4207 (no longer offered).

Prerequisite(s): JOUR 3208 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5005, for which additional credit is precluded.

Workshops averaging eight hours a week.

JOUR 4100 [0.5 credit]**Special Topic**

Examination of a topic in journalism not covered in depth in other courses. Seminar three hours a week.

Seminar three hours a week.

JOUR 4101 [0.5 credit]**Special Topic**

An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year. Seminar three hours a week.

JOUR 4300 [0.5 credit]**Specialized Journalism: Special Topic**

Examination of a topic not covered in depth in other specialized journalism courses. Topics may vary from year to year. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.

Also listed as MPAD 4300.

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5300, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4301 [0.5 credit]**Specialized Journalism: Business and the Markets**

Core skills development for business journalism: reading financial documents, covering activities of corporations, functioning of stock and other markets, trade policy and the broader economy, focus on contemporary business news and local publicly-traded companies. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5301, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4302 [0.5 credit]**Specialized Journalism: Business and Canadian Society**

The intersection between business and public policy, from climate change to taxation, pensions, labour and corporate social responsibility. What business does and how the media covers it. Emphasis on explanatory/analytical reporting, production of a related data project as an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5302, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4303 [0.5 credit]**Specialized Journalism: Health and Science**

The culture of health science research and major trends; key challenges confronting researchers and health science journalists around the world. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5303, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4304 [0.5 credit]**Specialized Journalism: Environment and Science**

Major trends and research culture in climate and environmental sciences, focusing on key global concerns. Issues facing researchers and journalists. Focus on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5304, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4305 [0.5 credit]**Specialized Journalism: Canada and the U.S.**

Exploration of the unique issues in Canada-U.S. relations, from diplomacy to trade. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5315, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4306 [0.5 credit]**Specialized Journalism: Canada and the World**

Diplomacy, war, terrorism, migration, the international economy, development and other issues of interest to journalists who want to write about Canada and international affairs. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5306, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4308 [0.5 credit]**Specialized Journalism: Sports and Sport Culture**

Workshop equipping students with the skills to move beyond the clichés of sports writing and live event coverage. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5308, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4309 [0.5 credit]**Specialized Journalism: Arts and Culture**

Students are introduced to arts and culture journalism, exploring issues and trends that are key to understanding and covering the arts and related cultural policy in Canada. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5309, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4310 [0.5 credit]**Specialized Journalism: Justice and the Law**

Areas of law that journalists may encounter along with a practical explanation of how law works. Students gain the language and tools needed to successfully analyze and write about legal issues. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5310, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4311 [0.5 credit]**Specialized Journalism: Justice and The Supreme Court**

Examination of the Supreme Court of Canada, and the role of journalists in covering it. Students attend hearings and gain insight into the court's role in the making and shaping of Canada. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5311, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4400 [0.5 credit]**Professional Skills: Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.

Seminar three hours a week.

JOUR 4401 [0.5 credit]**Professional Skills: Data Storytelling**

Instruction in telling stories from data. Focus on searching for, analyzing and mapping data, turning numbers into powerful narratives.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4402 [0.5 credit]**Professional Skills: Longform Writing**

Instruction in longform story production. Focus on researching and writing, including the art and craft of writing for magazines.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4403 [0.5 credit]**Professional Skills: Strategic Communication**

Workshop pairing student teams with non-profit groups that are in need of strategic communication advice.

Instruction in planning and implementation.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Also offered at the graduate level, with different requirements, as JOUR 5508, for which additional credit is precluded.

Lecture and practicum three hours a week.

JOUR 4404 [0.5 credit]**Professional Skills: Freelancing for Media Professionals**

Workshop preparing students to compete in a market that values the skills and mindset of entrepreneurial media workers.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4500 [0.5 credit]**Investigating Journalism: Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Also listed as MPAD 4500.

Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.

Seminar three hours a week.

JOUR 4501 [0.5 credit]**Investigating Journalism: Gender, Identity and Inequality**

How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis. Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.

Includes: Experiential Learning Activity

Also listed as MPAD 4501.

Precludes additional credit for JOUR 4307 (no longer offered).

Prerequisite(s): third- or fourth-year standing in B.J. Hons. or permission of the School.

Seminar three hours a week.

JOUR 4502 [0.5 credit]**Investigating Journalism: Journalism and Conflict**

For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.

Includes: Experiential Learning Activity

Also listed as MPAD 4502.

Prerequisite(s): fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4503 [0.5 credit]**Investigating Journalism: Journalism, Indigenous Peoples and Canada**

Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous peoples in the era of reconciliation.

Includes: Experiential Learning Activity

Also listed as MPAD 4503.

Prerequisite(s): third- or fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4504 [0.5 credit]**Investigating Journalism: The Media and International Development**

A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda?

Includes: Experiential Learning Activity

Also listed as MPAD 4504.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 4505 [1.0 credit]**Investigating Journalism: The Power and Politics of Government**

In-depth exploration of Canada's government, public policy and politics; parliamentary debate and committee hearings. Explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4201 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4900 [1.0 credit]**Honours Tutorial**

Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism.

Prerequisite(s): fourth-year B.J. (Honours) standing.

JOUR 4999 [0.0 credit]**Science Communication Certificate Professional Development Workshop**

A one-day workshop providing practical skills development for becoming an effective science communicator. Topics for discussion will include defining the audience and framing of information, reviews of effective science communication, career opportunities for science communicators, and one-to-one analysis of participants writing skills. Graded SAT/UNS.

Includes: Experiential Learning Activity

Also listed as ISAP 4999.

Prerequisite(s): This course is restricted to students enrolled in the Certificate of Science Communication, and who have completed at least 2.0 credits towards the certificate, including one of COMS 2500 or ISAP 3003.

A one-day workshop

Korean Language (Minor)

This section presents the requirements for programs in:

- Minor in Korean Language

Minor in Korean Language (4.0 credits)

Open to all undergraduate degree students.

Requirements:

1. **3.0 credits in KORE** 3.0
2. **1.0 credit in KORE** at the 3000-level or higher 1.0
3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.
4. The remaining requirements of the major discipline(s) and degree must be satisfied

Total Credits 4.0

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Korean (KORE) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

KORE 1010 [0.5 credit]

First-Year Korean I

For students with no knowledge of Korean. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for LANG 1010, when the language of instruction was Korean. Four hours a week.

KORE 1020 [0.5 credit]

First-Year Korean II

Continuation of first-year Korean. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for LANG 1020, when the language of instruction was Korean. Prerequisite(s): grade of C or higher in KORE 1010, or in LANG 1010 (when the language of instruction was Korean), or permission of the School. Four hours a week.

KORE 2010 [0.5 credit]

Second-Year Korean I

Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for LANG 2010, when the language of instruction was Korean. Prerequisite(s): grade of C or higher in KORE 1020, or in LANG 1020 (when the language of instruction was Korean), or permission of the School. Four hours a week.

KORE 2020 [0.5 credit]

Second-Year Korean II

Continuation of second-year Korean. Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for LANG 2020, when the language of instruction was Korean. Prerequisite(s): grade of C or higher in KORE 2010, or in LANG 2010 (when the language of instruction was Korean), or permission of the School. Four hours a week.

KORE 3010 [0.5 credit]

Third-Year Korean I

Continuation of the study of Korean to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Precludes additional credit for LING 3009 (when the language of instruction was Korean). Prerequisite(s): grade of C or higher in KORE 2020 or LANG 2020 (if taken in winter 2017), or permission of the School. Seminar three hours a week.

KORE 3020 [0.5 credit]

Third-Year Korean II

Continuation of third-year Korean. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Precludes additional credit for LING 3009 (when the language of instruction was Korean). Prerequisite(s): grade of C or higher in KORE 3010, or permission of the School. Seminar three hours a week.

KORE 4010 [0.5 credit]

Fourth-Year Korean I

Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Includes: Experiential Learning Activity. Prerequisite(s): grade of C or higher in KORE 3020, or permission of the School. Seminar three hours a week.

KORE 4020 [0.5 credit]

Fourth-Year Korean II

Continuation of Fourth-Year Korean. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains.

Compulsory attendance.

Prerequisite(s): grade of C or higher in KORE 4010, or permission of the School.

Seminar three hours a week.

Latin American and Caribbean Studies

This section presents the requirements for programs in:

- Specialization in Latin American and Caribbean Studies B.G.In.S. Honours
- Stream in Latin American and Caribbean Studies B.G.In.S.
- Minor in Latin American and Caribbean Studies

Program Requirements

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Latin American and Caribbean Studies

B.G.In.S. Honours (20.0 credits)

A. Credits Included in Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses 4.5

GINs 1000 [0.5]	Global History
GINs 1010 [0.5]	International Law and Politics
GINs 1020 [0.5]	Ethnography, Globalization and Culture
GINs 2000 [0.5]	Ethics and Globalization
GINs 2010 [0.5]	Globalization and International Economic Issues
GINs 2020 [0.5]	Global Literatures
GINs 3010 [0.5]	Global and International Theory
GINs 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINs 4090 [0.5]	Honours Seminar in Global and International Studies

2. 0.0 credit in: International Experience Requirement Preparation

GINs 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization 7.5

Note: Language Requirement - Students choosing the Latin America and Caribbean Studies Specialization must fulfil their language requirement with a language relevant to Latin America and the Caribbean other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.

- a. 1.0 credit in : Foundations

LACS 1001 [0.5] Introduction to Latin American and Caribbean Studies I

LACS 1002 [0.5] Introduction to Latin American and Caribbean Studies II

b. 1.0 credit from: History

HIST 2308 [0.5] Colonial Latin America

HIST 2309 [0.5] Modern Latin America

HIST 2710 [0.5] Introduction to Caribbean History

HIST 4704 [0.5] Caribbean and Latin American History

c. 0.5 credit from: Politics

PSCI 3204 [0.5] Politics of Latin America

PSCI 3205 [0.5] Mexican Politics

d. 3.0 credits from: Courses with LACS Content

ANTH 2640 [0.5] Andean Ethnography

ANTH 2650 [0.5] Ethnography of Mesoamerica

ANTH 4730 [0.5] Colonialism and Post-Colonialism

ENGL 2956 [0.5] Literatures of the Americas I

ENGL 2957 [0.5] Literatures of the Americas II

GEOG 3023 [0.5] Cities in a Global World

GEOG 3025 [0.5] Geographies of Selected Regions

GEOG 3030 [0.5] Regional Field Excursion

GINs 3900 [0.5] International Placement

GINs 4900 [0.5] Tutorial in Global and International Studies

GINs 4908 [1.0] Honours Research Essay

HIST 3704 [0.5] Aztecs

HIST 3710 [0.5] Themes in Caribbean History

HIST 3712 [0.5] Mexico: Aztecs to Narcos

HIST 3713 [0.5] Gender and Sexuality in Latin America

HIST 4700 [1.0] Seminar in World History

HIST 4915 [0.5] Topics in History (topics in LACS)

LACS 4001 [0.5] Issues in Latin American and Caribbean Studies (if not used toward Item f. Capstone Seminar, below)

LACS 4819 [0.5] Latin America and the World (if not used toward Item f. Capstone Seminar, below)

SOCI 4730 [0.5] Colonialism and Post-Colonialism

e. 1.5 credits from: Context

ANTH 2020 [0.5] Race and Ethnicity

ANTH 2040 [0.5] Anthropology and Gender

ANTH 2670 [0.5] Ethnography of Brazil

ANTH 2850 [0.5] Development and Underdevelopment

ANTH 3020 [0.5] Studies in Race and Ethnicity

ANTH 3027 [0.5] Studies in Globalization and Human Rights

ANTH 3600 [0.5] Studies in Anthropology and Indigenous Peoples

ECON 3508 [0.5] Introduction to Economic Development

ECON 4507 [0.5] The Economics of Development

ECON 4508 [0.5] International Aspects of Economic Development

ENGL 3965 [0.5] Intro to Postcolonial Theory

ENGL 3972 [0.5] Studies in Postcolonial Literature

ENGL 4802 [0.5]	Race, Ethnicity and Canadian Lit.	
ENGL 4947 [0.5]	Issues in Diaspora Literature	
ENGL 4975 [0.5]	Issues in Postcolonial Theory	
ENGL 4976 [0.5]	Issues in Postcolonial Literature	
GEOG 2200 [0.5]	Global Connections	
GEOG 2300 [0.5]	Space, Place and Culture	
GEOG 3021 [0.5]	Geographies of Culture and Identity	
GEOG 3024 [0.5]	Understanding Globalization	
GEOG 3209 [0.5]	Sustainability and Environment in the South	
GEOG 3404 [0.5]	Geographies of Economic Development	
GEOG 4024 [0.5]	Seminar in Globalization	
HIST 3217 [0.5]	Empire and Globalization	
HUMR 2202 [0.5]	Power Relations and Human Rights	
HUMR 2401 [0.5]	Political Repression	
HUMR 3501 [0.5]	Social, Economic and Cultural Rights	
HUMR 3503 [0.5]	Global Environmental Justice	
HUMR 4201 [0.5]	Citizenship and Human Rights	
LAWS 3208 [0.5]	International Trade Regulation	
MGDS 2000 [0.5]	Global Migration and Transnationalism	
PSCI 2102 [0.5]	Comparative Politics of the Global South	
PSCI 2602 [0.5]	International Relations: Global Political Economy	
PSCI 3105 [0.5]	Imperialism	
PSCI 3307 [0.5]	Politics of Human Rights	
PSCI 3502 [0.5]	Gender and Politics: Global South	
PSCI 3600 [0.5]	International Institutions	
PSCI 3802 [0.5]	Globalization and Human Rights	
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice	
PSCI 4105 [0.5]	Selected Problems in Development in the Global South	
PSCI 4500 [0.5]	Gender and Globalization	
PSCI 4505 [0.5]	Transitions to Democracy	
SOCI 2020 [0.5]	Race and Ethnicity	
SOCI 3020 [0.5]	Studies in Race and Ethnicity	
SOCI 3027 [0.5]	Globalization and Human Rights	
f. 0.5 credit in: Capstone Seminar		
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies	
LACS 4819 [0.5]	Latin America and the World	
PSCI 4819 [0.5]	Latin America and the World	
B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in:	Free Electives	8.0
C. Additional Requirements		
5. The International Experience requirement must be met.		
6. The Language requirement must be met.		
Total Credits		20.0

**Stream in Latin American and Caribbean Studies
B.G.In.S. (15.0 credits)**

Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in:	Core Courses	4.0
GINS 1000 [0.5]	Global History	

GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from:	the Stream	4.0
Note: Language Requirement - Students choosing the Latin America and Caribbean Studies Stream must fulfil their language requirement with a language relevant to Latin America and the Caribbean other than English. The Program Director will maintain a list of those languages suitable for meeting this requirement.		
a. Foundations		
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I	
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II	
b. History		
HIST 2308 [0.5]	Colonial Latin America	
HIST 2309 [0.5]	Modern Latin America	
HIST 2710 [0.5]	Introduction to Caribbean History	
c. Politics		
PSCI 3204 [0.5]	Politics of Latin America	
PSCI 3205 [0.5]	Mexican Politics	
d. Courses with LACS Content		
ANTH 2640 [0.5]	Andean Ethnography	
ANTH 2650 [0.5]	Ethnography of Mesoamerica	
ENGL 2956 [0.5]	Literatures of the Americas I	
ENGL 2957 [0.5]	Literatures of the Americas II	
GEOG 3023 [0.5]	Cities in a Global World	
GEOG 3025 [0.5]	Geographies of Selected Regions	
GEOG 3030 [0.5]	Regional Field Excursion	
GINS 3900 [0.5]	International Placement	
HIST 3704 [0.5]	Aztecs	
HIST 3710 [0.5]	Themes in Caribbean History	
HIST 3712 [0.5]	Mexico: Aztecs to Narcos	
HIST 3713 [0.5]	Gender and Sexuality in Latin America	
e. Context		
ANTH 2020 [0.5]	Race and Ethnicity	
ANTH 2040 [0.5]	Anthropology and Gender	
ANTH 2670 [0.5]	Ethnography of Brazil	
ANTH 2850 [0.5]	Development and Underdevelopment	
ANTH 3020 [0.5]	Studies in Race and Ethnicity	
ANTH 3027 [0.5]	Studies in Globalization and Human Rights	
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples	
ECON 3508 [0.5]	Introduction to Economic Development	
ENGL 3965 [0.5]	Intro to Postcolonial Theory	
ENGL 3972 [0.5]	Studies in Postcolonial Literature	
GEOG 2200 [0.5]	Global Connections	

GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3024 [0.5]	Understanding Globalization
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
HIST 3217 [0.5]	Empire and Globalization
HUMR 2202 [0.5]	Power Relations and Human Rights
HUMR 2401 [0.5]	Political Repression
HUMR 3501 [0.5]	Social, Economic and Cultural Rights
HUMR 3503 [0.5]	Global Environmental Justice
LAWS 3208 [0.5]	International Trade Regulation
MGDS 2000 [0.5]	Global Migration and Transnationalism
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3105 [0.5]	Imperialism
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3802 [0.5]	Globalization and Human Rights
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3027 [0.5]	Globalization and Human Rights

B. Credits Not Included in the Major CGPA (7.0 credits):

3. 7.0 credits in: Free Electives 7.0

C. Additional Requirements

4. The Language requirement must be met.

Total Credits 15.0

Minor in Latin American and Caribbean Studies (4.0 credits)

This minor is available to all undergraduate degree students with the exception of those in the B.G.In.S. Specialization or Stream in Latin American and Caribbean Studies.

Requirements

1. 1.0 credit in:	1.0
LACS 1001 [0.5]	Introduction to Latin American and Caribbean Studies I
LACS 1002 [0.5]	Introduction to Latin American and Caribbean Studies II
2. 1.0 credit from Approved Latin American and Caribbean Studies Electives at the 2000-level or higher	1.0
3. 1.0 credit from Approved Latin American and Caribbean Studies Electives at the 3000-level or higher	1.0
4. 0.5 credit from:	0.5
LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies
LACS 4819 [0.5]	Latin America and the World
5. 0.5 credit from Approved Latin American and Caribbean Studies Electives at the 4000-level or higher	0.5

6. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Approved Latin American and Caribbean Studies Electives

Anthropology

ANTH 2020 [0.5]	Race and Ethnicity
ANTH 2040 [0.5]	Anthropology and Gender
ANTH 2640 [0.5]	Andean Ethnography
ANTH 2650 [0.5]	Ethnography of Mesoamerica
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 2850 [0.5]	Development and Underdevelopment
ANTH 3020 [0.5]	Studies in Race and Ethnicity
ANTH 3027 [0.5]	Studies in Globalization and Human Rights
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples
ANTH 4730 [0.5]	Colonialism and Post-Colonialism

Economics

ECON 3508 [0.5]	Introduction to Economic Development
ECON 4507 [0.5]	The Economics of Development
ECON 4508 [0.5]	International Aspects of Economic Development

English

ENGL 2956 [0.5]	Literatures of the Americas I
ENGL 2957 [0.5]	Literatures of the Americas II
ENGL 3965 [0.5]	Intro to Postcolonial Theory
ENGL 3972 [0.5]	Studies in Postcolonial Literature
ENGL 4947 [0.5]	Issues in Diaspora Literature
ENGL 4975 [0.5]	Issues in Postcolonial Theory
ENGL 4976 [0.5]	Issues in Postcolonial Literature
ENGL 4802 [0.5]	Race, Ethnicity and Canadian Lit.

Geography

GEOG 2200 [0.5]	Global Connections
GEOG 2300 [0.5]	Space, Place and Culture
GEOG 3021 [0.5]	Geographies of Culture and Identity
GEOG 3023 [0.5]	Cities in a Global World
GEOG 3024 [0.5]	Understanding Globalization
GEOG 3025 [0.5]	Geographies of Selected Regions
GEOG 3030 [0.5]	Regional Field Excursion
GEOG 3209 [0.5]	Sustainability and Environment in the South
GEOG 3404 [0.5]	Geographies of Economic Development
GEOG 4024 [0.5]	Seminar in Globalization

History

HIST 2308 [0.5]	Colonial Latin America
HIST 2309 [0.5]	Modern Latin America
HIST 2710 [0.5]	Introduction to Caribbean History
HIST 3217 [0.5]	Empire and Globalization
HIST 3704 [0.5]	Aztecs
HIST 3710 [0.5]	Themes in Caribbean History
HIST 3712 [0.5]	Mexico: Aztecs to Narcos
HIST 3713 [0.5]	Gender and Sexuality in Latin America

HIST 4700 [1.0]	Seminar in World History
HIST 4704 [0.5]	Caribbean and Latin American History
HIST 4915 [0.5]	Topics in History (topics in LACS)

Human Rights

HUMR 2202 [0.5]	Power Relations and Human Rights
HUMR 2401 [0.5]	Political Repression
HUMR 3501 [0.5]	Social, Economic and Cultural Rights
HUMR 3503 [0.5]	Global Environmental Justice
HUMR 4201 [0.5]	Citizenship and Human Rights

Latin American and Caribbean Studies

LACS 4001 [0.5]	Issues in Latin American and Caribbean Studies (if not used toward Item 4, above)
LACS 4819 [0.5]	Latin America and the World (if not used toward Item 4, above)

Law

LAWS 3208 [0.5]	International Trade Regulation
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Migration and Diaspora Studies

MGDS 2000 [0.5]	Global Migration and Transnationalism (Migration and Diaspora Studies)
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Political Science

PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3105 [0.5]	Imperialism
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
PSCI 4105 [0.5]	Selected Problems in Development in the Global South
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4505 [0.5]	Transitions to Democracy

Sociology

SOCI 2020 [0.5]	Race and Ethnicity
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3027 [0.5]	Globalization and Human Rights
SOCI 4730 [0.5]	Colonialism and Post-Colonialism

Regulations

In addition to the program requirements described here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar); and
2. for B.G.In.S. students the regulations pertaining to the B.G.In.S. degree (see the Global and International Studies section of this Calendar).

Latin American and Caribbean Studies (LACS) Courses

LACS 1001 [0.5 credit]

Introduction to Latin American and Caribbean Studies I

An interdisciplinary introduction to the history, culture, societies, and literatures of the region. Students will get a broad overview of the region and will be introduced to the disciplines used to study these societies. Lectures/groups three hours per week.

LACS 1002 [0.5 credit]

Introduction to Latin American and Caribbean Studies II

An interdisciplinary introduction to the major political, economic, environmental, and geographical issues confronting the region. Lectures/groups three hours per week.

LACS 4001 [0.5 credit]

Issues in Latin American and Caribbean Studies

An examination of the major issues confronting Latin America and the Caribbean including democratization, economic integration, indigenous and women's movements, human rights, social justice, and political change.

Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.

Seminar three hours per week.

LACS 4819 [0.5 credit]

Latin America and the World

Latin America's changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.

Also listed as PSCI 4819.

Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.

Seminar three hours a week.

Law

This section presents the requirements for programs in:

- Law B.A. Honours
- Law B.A. Combined Honours
- Law and Human Rights B.A. Combined Honours
- Law with Concentration in Law, Policy and Government B.A. Honours
- Law with Concentration in Law, Policy and Government B.A. Combined Honours
- Law with Concentration in Business Law B.A. Honours
- Law with Concentration in Business Law B.A. Combined Honours
- Law with Concentration in Transnational Law and Human Rights B.A. Honours
- Law with Concentration in Transnational Law and Human Rights B.A. Combined Honours
- Law B.A.

- Specialization in Global Law and Social Justice B.G.In.S. Honours
- Stream in Global Law and Social Justice B.G.In.S.
- Minor in Law
- Mention : français : Law

Program Requirements

Law

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit in:	1.0
LAWS 1001 [0.5] Introduction to Legal Studies 1	
LAWS 1002 [0.5] Introduction to Legal Studies 2	
2. 0.5 credit from:	0.5
LAWS 2201 [0.5] Persons and Property	
LAWS 2202 [0.5] Obligations	
3. 0.5 credit from:	0.5
LAWS 2301 [0.5] Criminal Justice System	
LAWS 2302 [0.5] Criminal Law	
4. 0.5 credit from:	0.5
LAWS 2105 [0.5] Social Justice and Human Rights	
LAWS 2501 [0.5] Law, State and Constitution	
LAWS 2502 [0.5] Law, State and Citizen	
LAWS 2601 [0.5] Public International Law	
5. 0.5 credit from Items 2-4 not already used to fulfil those items.	0.5
6. 1.0 credit in:	1.0
LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1	
LAWS 3908 [0.5] Methodological Approaches in Legal Studies 2	
7. 3.0 credits in LAWS at the 4000-level or above or in IPAF 4900 (with permission of the department).	3.0
8. 2.0 credits in LAWS	2.0
B. Credits Not Included in the Major CGPA (11.0 credits)	
9. 8.0 credits in electives not in LAWS	8.0
10. 3.0 credits in free electives.	3.0
Total Credits	20.0

Notes:

1. Students with a Major in Law are encouraged, but not required, to consider completing a Minor in another discipline in order to broaden their exposure to that discipline.

Law

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Law Major CGPA (6.5 credits)

1. 1.0 credit in:	1.0
LAWS 1001 [0.5] Introduction to Legal Studies 1	
LAWS 1002 [0.5] Introduction to Legal Studies 2	
2. 0.5 credit from:	0.5
LAWS 2201 [0.5] Persons and Property	
LAWS 2202 [0.5] Obligations	
3. 0.5 credit from:	0.5
LAWS 2301 [0.5] Criminal Justice System	

LAWS 2302 [0.5] Criminal Law	0.5
4. 0.5 credit from:	0.5
LAWS 2105 [0.5] Social Justice and Human Rights	
LAWS 2501 [0.5] Law, State and Constitution	
LAWS 2502 [0.5] Law, State and Citizen	
LAWS 2601 [0.5] Public International Law	
5. 0.5 credit from Items 2-4 not already used to fulfil those items.	0.5
6. 1.0 credit in:	1.0
LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1	
LAWS 3908 [0.5] Methodological Approaches in Legal Studies 2	
7. 0.5 credit in LAWS at the 3000 level or above	0.5
8. 2.0 credits in LAWS at the 4000 level or above	2.0
B. Additional Requirements (13.5 credits)	13.5
9. The requirements from the other discipline must be satisfied	
10. Sufficient free electives to make up 20.0 credits total for the program.	
Total Credits	20.0

Law and Human Rights

B.A. Combined Honours (20.0 credits)

Students may complete a B.A.(Honours) in Law and Human Rights. Students must complete the Law - B.A. Combined Honours requirements stated above. The Human Rights requirements are offered jointly by the Departments of Law, Philosophy, Political Science and Sociology: please consult the Human Rights program entry for details concerning the Human Rights component of the program.

Law with Concentration in Law, Policy and Government

B.A. Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Law, Policy and Government are those in **Items 2, 7, 8, 9** below.

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit in:	1.0
LAWS 1001 [0.5] Introduction to Legal Studies 1	
LAWS 1002 [0.5] Introduction to Legal Studies 2	
2. 1.0 credit in:	1.0
LAWS 2501 [0.5] Law, State and Constitution	
LAWS 2502 [0.5] Law, State and Citizen	
3. 0.5 credits from:	0.5
LAWS 2201 [0.5] Persons and Property	
LAWS 2202 [0.5] Obligations	
4. 0.5 credit from:	0.5
LAWS 2301 [0.5] Criminal Justice System	
LAWS 2302 [0.5] Criminal Law	
5. 0.5 credit from:	0.5
LAWS 2105 [0.5] Social Justice and Human Rights	
LAWS 2601 [0.5] Public International Law	
(or 0.5 credit from Items 3-4 not already used to fulfil those items)	
6. 1.0 credit in:	1.0

LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1	
LAWS 3908 [0.5]	Methodological Approaches in Legal Studies 2	
7. 1.5 credits in:		1.5
LAWS 3005 [0.5]	Law and Regulation	
LAWS 3506 [0.5]	Administrative Law	
LAWS 4801 [0.5]	Risk and the Legal Process	
8. 2.0 credits from:		2.0
LAWS 3106 [0.5]	Law and Social Regulation	
LAWS 3405 [0.5]	Labour Law	
LAWS 3500 [0.5]	Constitutional Law	
LAWS 3502 [0.5]	Regulating Freedom of Expression in Canada	
LAWS 3503 [0.5]	Equality and Discrimination	
LAWS 3504 [0.5]	Law and Aboriginal Peoples	
LAWS 3509 [0.5]	The Charter of Rights Topics	
LAWS 3800 [0.5]	Law of Environmental Quality	
9. 1.5 credits from:		1.5
LAWS 4006 [0.5]	Religion and State in Canada	
LAWS 4101 [0.5]	Contemporary Justice Theories	
LAWS 4102 [0.5]	Controversies in Rights Theory	
LAWS 4507 [0.5]	Administrative Law and Control	
LAWS 4510 [0.5]	Topics in Law, Policy and Government	
LAWS 4603 [0.5]	Transitional Justice	
LAWS 4607 [0.5]	Immigration and Refugee Law	
LAWS 4800 [0.5]	Environment and Social Justice	
LAWS 4901 [0.5]	Tutorial in Law	
LAWS 4902 [0.5]	Tutorial in Law	
LAWS 4908 [1.0]	Honours Paper	
10. 1.0 credit in LAWS at the 4000 level or above		1.0
B. Credits Not Included in the Major CGPA (9.5 credits)		
11. 8.0 credits in electives not in LAWS		8.0
12. 1.5 credits in free electives.		1.5
Total Credits		20.0

Notes:

- Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 9 above must complete an approved topic related to the theme of the Concentration.
- Students completing the B.A. (Honours) in Law with a Concentration in Law, Policy and Government are encouraged, but not required, to consider completing a Minor in another discipline (e.g. Political Science) to broaden their exposure to that discipline.
- The Concentration in Law, Policy and Government is not available to students in the Law B.A. program.

Law with Concentration in Law, Policy and Government

B.A. Combined Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Law, Policy and Government are those in **Items 2, 7, 8, 9** below.

A. Credits Included in the Law Major CGPA (8.0 credits)

1. 1.0 credit in:		1.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
2. 1.0 credit in:		1.0
LAWS 2501 [0.5]	Law, State and Constitution	
LAWS 2502 [0.5]	Law, State and Citizen	
3. 0.5 credits from:		0.5
LAWS 2201 [0.5]	Persons and Property	
LAWS 2202 [0.5]	Obligations	
4. 0.5 credit from:		0.5
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
5. 0.5 credit from:		0.5
LAWS 2105 [0.5]	Social Justice and Human Rights	
LAWS 2601 [0.5]	Public International Law	
(or 0.5 credit from Items 3-4 not already used to fulfil those items)		
6. 1.0 credit in:		1.0
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1	
LAWS 3908 [0.5]	Methodological Approaches in Legal Studies 2	
7. 1.5 credits in:		1.5
LAWS 3005 [0.5]	Law and Regulation	
LAWS 3506 [0.5]	Administrative Law	
LAWS 4801 [0.5]	Risk and the Legal Process	
8. 0.5 credit from:		0.5
LAWS 3106 [0.5]	Law and Social Regulation	
LAWS 3405 [0.5]	Labour Law	
LAWS 3500 [0.5]	Constitutional Law	
LAWS 3502 [0.5]	Regulating Freedom of Expression in Canada	
LAWS 3503 [0.5]	Equality and Discrimination	
LAWS 3504 [0.5]	Law and Aboriginal Peoples	
LAWS 3509 [0.5]	The Charter of Rights Topics	
LAWS 3800 [0.5]	Law of Environmental Quality	
9. 1.5 credits from:		1.5
LAWS 4006 [0.5]	Religion and State in Canada	
LAWS 4101 [0.5]	Contemporary Justice Theories	
LAWS 4102 [0.5]	Controversies in Rights Theory	
LAWS 4507 [0.5]	Administrative Law and Control	
LAWS 4510 [0.5]	Topics in Law, Policy and Government	
LAWS 4603 [0.5]	Transitional Justice	
LAWS 4607 [0.5]	Immigration and Refugee Law	
LAWS 4800 [0.5]	Environment and Social Justice	
LAWS 4901 [0.5]	Tutorial in Law	
LAWS 4902 [0.5]	Tutorial in Law	
LAWS 4908 [1.0]	Honours Paper	
B. Additional Requirements (12.0 credits)		12.0
10. The requirements for B.A. Combined Honours in the other discipline		
11. Sufficient free electives to total 20.0 credits for the program.		
Total Credits		20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 9 above must complete an approved topic related to the theme of the Concentration.
2. Where the Combined Honours is with the School of Journalism and Communication, the degree awarded will be the Bachelor of Journalism with Law with a Concentration in Law, Policy and Government. Students are directed to the regulations of the School of Journalism and Communication in this Calendar. The Concentration in Law, Policy and Government is not available to students in the Law B.A. program.

Law with Concentration in Business Law B.A. Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Business Law are those in **Items 2, 7, 8, 9** below.

A. Credits Included in the major CGPA (10.5 credits)

1. 1.0 credit in:	1.0
LAWS 1001 [0.5] Introduction to Legal Studies 1	
LAWS 1002 [0.5] Introduction to Legal Studies 2	
2. 1.0 credit in:	1.0
LAWS 2201 [0.5] Persons and Property	
LAWS 2202 [0.5] Obligations	
3. 0.5 credits from:	0.5
LAWS 2301 [0.5] Criminal Justice System	
LAWS 2302 [0.5] Criminal Law	
4. 0.5 credit from:	0.5
LAWS 2105 [0.5] Social Justice and Human Rights	
LAWS 2501 [0.5] Law, State and Constitution	
LAWS 2502 [0.5] Law, State and Citizen	
LAWS 2601 [0.5] Public International Law	
5. 0.5 credit from Items 3-4 not already used to fulfil those items.	0.5
6. 1.0 credit in:	1.0
LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1	
LAWS 3908 [0.5] Methodological Approaches in Legal Studies 2	
7. 1.5 credits in:	1.5
LAWS 3003 [0.5] Contracts	
LAWS 3201 [0.5] Business Enterprise Frameworks	
LAWS 3206 [0.5] Banking Law	
8. 1.5 credits from:	1.5
LAWS 3202 [0.5] Intellectual Property	
LAWS 3205 [0.5] Consumer Law	
LAWS 3207 [0.5] International Transactions	
LAWS 3208 [0.5] International Trade Regulation	
LAWS 3401 [0.5] Employment Law	
LAWS 3405 [0.5] Labour Law	
9. 2.0 credits from:	2.0
LAWS 4200 [0.5] International Economic Law	
LAWS 4202 [0.5] Accountability of Management	
LAWS 4204 [0.5] Legal Issues in eCommerce	
LAWS 4209 [0.5] Topics in Business Law	

LAWS 4302 [0.5] Regulation of Corporate Crime	
LAWS 4402 [0.5] Employment Dispute Resolution	
LAWS 4801 [0.5] Risk and the Legal Process	
LAWS 4901 [0.5] Tutorial in Law	
LAWS 4902 [0.5] Tutorial in Law	
LAWS 4908 [1.0] Honours Paper	
10. 1.0 credit in LAWS at the 4000 level or above	1.0
B. Credits Not Included in the Major CGPA (9.5 credits)	
11. 8.0 credits in electives not in LAWS	8.0
12. 1.5 credits in free electives.	1.5
Total Credits	20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward Item 9 above must complete an approved topic related to the theme of the Concentration.
2. Students completing the B.A. (Honours) in Law with a Concentration in Business Law are encouraged, but not required, to consider completing a Minor in another discipline (e.g. Business) in order to broaden their exposure to that discipline.
3. The Concentration in Business Law is not available to students in the Law B.A. program.

Law with Concentration in Business Law B.A. Combined Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Business Law are those in **Items 2, 7, 8** below.

A. Credits Included in the Law Major CGPA (8.0 credits)

1. 1.0 credit in:	1.0
LAWS 1001 [0.5] Introduction to Legal Studies 1	
LAWS 1002 [0.5] Introduction to Legal Studies 2	
2. 1.0 credit in:	1.0
LAWS 2201 [0.5] Persons and Property	
LAWS 2202 [0.5] Obligations	
3. 0.5 credit from:	0.5
LAWS 2301 [0.5] Criminal Justice System	
LAWS 2302 [0.5] Criminal Law	
4. 0.5 credit from:	0.5
LAWS 2105 [0.5] Social Justice and Human Rights	
LAWS 2501 [0.5] Law, State and Constitution	
LAWS 2502 [0.5] Law, State and Citizen	
LAWS 2601 [0.5] Public International Law	
5. 0.5 credit from Items 3-4 not already used to fulfil those items.	0.5
6. 1.0 credit in:	1.0
LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1	
LAWS 3908 [0.5] Methodological Approaches in Legal Studies 2	
7. 1.5 credits in:	1.5
LAWS 3003 [0.5] Contracts	
LAWS 3201 [0.5] Business Enterprise Frameworks	
LAWS 3206 [0.5] Banking Law	

8. 2.0 credits from:	2.0
LAWS 4200 [0.5]	International Economic Law
LAWS 4202 [0.5]	Accountability of Management
LAWS 4204 [0.5]	Legal Issues in eCommerce
LAWS 4209 [0.5]	Topics in Business Law
LAWS 4302 [0.5]	Regulation of Corporate Crime
LAWS 4402 [0.5]	Employment Dispute Resolution
LAWS 4801 [0.5]	Risk and the Legal Process
LAWS 4901 [0.5]	Tutorial in Law
LAWS 4902 [0.5]	Tutorial in Law
LAWS 4908 [1.0]	Honours Paper
B. Additional Requirements (12.0 credits)	12.0
9. The requirements from the other discipline must be satisfied	
10. Sufficient free electives to make up 20.0 credits total for the program	
Total Credits	20.0

Notes:

1. Students counting LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward Item 8 above must complete an approved topic related to the theme of the Concentration.
2. Where the Combined Honours is with the School of Journalism and Communication, the degree awarded will be the Bachelor of Journalism with Law with a Concentration in Business Law. Students are directed to the regulations of the School of Journalism and Communication.

Law with Concentration in Transnational Law and Human Rights

B.A. Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration. The courses defining the Concentration in Transnational Law and Human Rights are those in **Items 2, 7, 8, 9** below.

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit in:	1.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1
LAWS 1002 [0.5]	Introduction to Legal Studies 2
2. 1.0 credit in:	1.0
LAWS 2105 [0.5]	Social Justice and Human Rights
LAWS 2601 [0.5]	Public International Law
3. 0.5 credits in:	0.5
LAWS 2502 [0.5]	Law, State and Citizen
4. 0.5 credit from:	0.5
LAWS 2201 [0.5]	Persons and Property
LAWS 2202 [0.5]	Obligations
5. 0.5 credit from:	0.5
LAWS 2301 [0.5]	Criminal Justice System
LAWS 2302 [0.5]	Criminal Law
LAWS 2501 [0.5]	Law, State and Constitution
6. 1.0 credit in:	1.0
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1

LAWS 3908 [0.5]	Methodological Approaches in Legal Studies 2	
7. 1.5 credits in:		1.5
LAWS 3503 [0.5]	Equality and Discrimination	
LAWS 3602 [0.5]	International Human Rights	
LAWS 4601 [0.5]	Transnational Law and Human Rights	
8. 1.5 credits from:		1.5
LAWS 3001 [0.5]	Women and the Legal Process	
LAWS 3207 [0.5]	International Transactions	
LAWS 3208 [0.5]	International Trade Regulation	
LAWS 3504 [0.5]	Law and Aboriginal Peoples	
LAWS 3509 [0.5]	The Charter of Rights Topics	
LAWS 3604 [0.5]	International Organizations	
9. 2.0 credits from:		2.0
LAWS 4001 [0.5]	Law, Family and Gender	
LAWS 4002 [0.5]	Feminist Theories of Law	
LAWS 4006 [0.5]	Religion and State in Canada	
LAWS 4100 [0.5]	Modern Legal Theory	
LAWS 4101 [0.5]	Contemporary Justice Theories	
LAWS 4102 [0.5]	Controversies in Rights Theory	
LAWS 4105 [0.5]	Global Justice Theory	
LAWS 4106 [0.5]	Law and Violence	
LAWS 4602 [0.5]	Is Religious Freedom a Human Right?	
LAWS 4603 [0.5]	Transitional Justice	
LAWS 4605 [0.5]	Topics in International Law	
LAWS 4606 [0.5]	International Law of Armed Conflict	
LAWS 4607 [0.5]	Immigration and Refugee Law	
LAWS 4610 [0.5]	Special Topics in Transnational Law and Human Rights	
LAWS 4901 [0.5]	Tutorial in Law	
LAWS 4902 [0.5]	Tutorial in Law	
LAWS 4908 [1.0]	Honours Paper	
10. 0.5 credit in LAWS at the 3000 level or above		0.5
11. 0.5 credit in LAWS at the 4000 level		0.5
B. Credits Not Included in the Major CGPA (9.5 credits)		
12. 8.0 credits in electives not in LAWS		8.0
13. 1.5 credits in free electives.		1.5
Total Credits		20.0

Notes:

1. Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 9 above must complete an approved topic related to the theme of the Concentration.
2. Students completing the B.A. (Honours) in Law with a Concentration in Transnational Law and Human Rights are encouraged, but not required, to consider completing a Minor in another discipline (e.g. Political Science) to broaden their exposure to that discipline.
3. The Concentration in Transnational Law and Human Rights is not available to students in the Law B.A. program.

Law with Concentration in Transnational Law and Human Rights

B.A. Combined Honours (20.0 credits)

Continuation in this concentration requires a minimum CGPA of 6.50 over credits in the concentration.

The courses defining the Concentration in Transnational Law and Human Rights are those in **Items 2, 7, 8, 9** below.

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in:		1.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
2. 1.0 credit in:		1.0
LAWS 2105 [0.5]	Social Justice and Human Rights	
LAWS 2601 [0.5]	Public International Law	
3. 0.5 credits in:		0.5
LAWS 2502 [0.5]	Law, State and Citizen	
4. 0.5 credit from:		0.5
LAWS 2201 [0.5]	Persons and Property	
LAWS 2202 [0.5]	Obligations	
5. 0.5 credit from:		0.5
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
LAWS 2501 [0.5]	Law, State and Constitution	
6. 1.0 credit in:		1.0
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1	
LAWS 3908 [0.5]	Methodological Approaches in Legal Studies 2	
7. 1.5 credits in:		1.5
LAWS 3503 [0.5]	Equality and Discrimination	
LAWS 3602 [0.5]	International Human Rights	
LAWS 4601 [0.5]	Transnational Law and Human Rights	
8. 1.5 credits from:		1.5
LAWS 4001 [0.5]	Law, Family and Gender	
LAWS 4002 [0.5]	Feminist Theories of Law	
LAWS 4006 [0.5]	Religion and State in Canada	
LAWS 4100 [0.5]	Modern Legal Theory	
LAWS 4101 [0.5]	Contemporary Justice Theories	
LAWS 4102 [0.5]	Controversies in Rights Theory	
LAWS 4105 [0.5]	Global Justice Theory	
LAWS 4106 [0.5]	Law and Violence	
LAWS 4602 [0.5]	Is Religious Freedom a Human Right?	
LAWS 4603 [0.5]	Transitional Justice	
LAWS 4605 [0.5]	Topics in International Law	
LAWS 4606 [0.5]	International Law of Armed Conflict	
LAWS 4607 [0.5]	Immigration and Refugee Law	
LAWS 4610 [0.5]	Special Topics in Transnational Law and Human Rights	
LAWS 4901 [0.5]	Tutorial in Law	
LAWS 4902 [0.5]	Tutorial in Law	
LAWS 4908 [1.0]	Honours Paper	
9. 0.5 credit in LAWS at the 3000 level or above		0.5
B. Additional Requirements (12.0 credits)		12.0

10. The requirements for B.A. Combined Honours in the other discipline

11. Sufficient free electives to make up 20.0 credits total for the program

Total Credits **20.0**

Notes:

- Students who count LAWS 4901, LAWS 4902 or LAWS 4908 [1.0] toward the requirements of Item 8 above must complete an approved topic related to the theme of the Concentration.
- Where the Combined Honours is with the School of Journalism and Communication, the degree awarded will be the Bachelor of Journalism with Law with a Concentration in Transnational Law and Human Rights. Students are directed to the regulations of the School of Journalism and Communication in this Calendar.
- Where the Combined Honours is with the Human Rights program, students are directed to the specific requirements for the Human Rights Combined Honours with Law with Concentration in Transnational Law and Human Rights. Combined Honours students should note that courses required by one major (such as Law) cannot be counted to fulfill the requirements of the second major (such as Human Rights).

Law

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.5 credits)

1. 1.0 credit in:		1.0
LAWS 1001 [0.5]	Introduction to Legal Studies 1	
LAWS 1002 [0.5]	Introduction to Legal Studies 2	
2. 2.0 credits from:		2.0
LAWS 2105 [0.5]	Social Justice and Human Rights	
LAWS 2201 [0.5]	Persons and Property	
LAWS 2202 [0.5]	Obligations	
LAWS 2301 [0.5]	Criminal Justice System	
LAWS 2302 [0.5]	Criminal Law	
LAWS 2501 [0.5]	Law, State and Constitution	
LAWS 2502 [0.5]	Law, State and Citizen	
LAWS 2601 [0.5]	Public International Law	
3. 0.5 credit in:		0.5
LAWS 2908 [0.5]	Methodological Approaches in Legal Studies 1	
4. 1.0 credit in LAWS at the 3000-level or above		1.0
5. 2.0 credits in LAWS		2.0
B. Credits Not Included in the Major CGPA (8.5 credits)		
6. 5.5 credits in electives not in LAWS		5.5
7. 3.0 credits in free electives.		3.0
Total Credits		15.0

Note: Students with a Major in Law are encouraged, but not required, to consider completing a Minor in another discipline in order to broaden their exposure to that discipline.

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Law and Social Justice B.G.In.S. Honours (20.0 credits)

This Specialization is also available with a *Mention : français* option.

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5] Global History	
GINS 1010 [0.5] International Law and Politics	
GINS 1020 [0.5] Ethnography, Globalization and Culture	
GINS 2000 [0.5] Ethics and Globalization	
GINS 2010 [0.5] Globalization and International Economic Issues	
GINS 2020 [0.5] Global Literatures	
GINS 3010 [0.5] Global and International Theory	
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5] Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0] International Experience Requirement Preparation	
3. 7.5 credits in: the Specialization	
a. 1.0 credit in: Law Foundations	1.0
LAWS 1001 [0.5] Introduction to Legal Studies 1	
LAWS 1002 [0.5] Introduction to Legal Studies 2	
b. 0.5 credit in: Research Methodologies	0.5
LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1	
c. 1.0 credit in: Second Year Core Courses	1.0
LAWS 2105 [0.5] Social Justice and Human Rights or HUMR 2001 [0.5] Human Rights: Theories and Foundations and	
LAWS 2601 [0.5] Public International Law	
d. 0.5 credit from: Third Year Core Courses	0.5
LAWS 3602 [0.5] International Human Rights	
LAWS 3604 [0.5] International Organizations	
e. 3.5 credits from: Global Law and Social Justice (students must select at least 0.5 credit at the 4000 level from this list)	3.5
HUMR 3002 [0.5] Right to the City	
HUMR 3301 [0.5] Racialization, Racism and Human Rights	
HUMR 3302 [0.5] Culture, Religion, and Women's Human Rights	
HUMR 3303 [0.5] Children's Rights	
HUMR 3401 [0.5] Histories of Persecution and Genocide	
HUMR 3501 [0.5] Social, Economic and Cultural Rights	
HUMR 3503 [0.5] Global Environmental Justice	

HUMR 3504 [0.5] Public Health and Human Rights	
HUMR 4201 [0.5] Citizenship and Human Rights (if not used in f)	
HUMR 4401 [0.5] Gender, Citizenship and Social Justice in a Transnational World (if not used in f)	
HUMR 4502 [0.5] Global Indigenous Knowledges and Movements (if not used in f)	
LAWS 3207 [0.5] International Transactions	
LAWS 3208 [0.5] International Trade Regulation	
LAWS 3503 [0.5] Equality and Discrimination	
LAWS 3504 [0.5] Law and Aboriginal Peoples	
LAWS 3509 [0.5] The Charter of Rights Topics	
LAWS 3602 [0.5] International Human Rights (if not used in d)	
LAWS 3604 [0.5] International Organizations (if not used in d)	
LAWS 4101 [0.5] Contemporary Justice Theories	
LAWS 4102 [0.5] Controversies in Rights Theory	
LAWS 4105 [0.5] Global Justice Theory (if not used in f)	
LAWS 4106 [0.5] Law and Violence	
LAWS 4200 [0.5] International Economic Law (if not used in f)	
LAWS 4601 [0.5] Transnational Law and Human Rights (if not used in f)	
LAWS 4602 [0.5] Is Religious Freedom a Human Right?	
LAWS 4603 [0.5] Transitional Justice (if not used in f)	
LAWS 4605 [0.5] Topics in International Law	
LAWS 4606 [0.5] International Law of Armed Conflict (if not used in f)	
LAWS 4607 [0.5] Immigration and Refugee Law (if not used in f)	
LAWS 4610 [0.5] Special Topics in Transnational Law and Human Rights	
LAWS 4800 [0.5] Environment and Social Justice	
LAWS 4901 [0.5] Tutorial in Law (topic in Global Law and Social Justice)	
LAWS 4902 [0.5] Tutorial in Law (topic in Global Law and Social Justice)	
LAWS 4903 [0.5] Advanced Legal Topics (topic in Global Law and Social Justice)	
LAWS 4904 [0.5] Advanced Legal Topics (topic in Global Law and Social Justice)	
f. 1.0 credit from: Core Honours Seminars and Honours Research Essay	1.0
GINS 4908 [1.0] Honours Research Essay (topic in Global Law and Social Justice)	
HUMR 4201 [0.5] Citizenship and Human Rights	
HUMR 4401 [0.5] Gender, Citizenship and Social Justice in a Transnational World	
HUMR 4502 [0.5] Global Indigenous Knowledges and Movements	
LAWS 4105 [0.5] Global Justice Theory	
LAWS 4200 [0.5] International Economic Law	
LAWS 4601 [0.5] Transnational Law and Human Rights	
LAWS 4603 [0.5] Transitional Justice	
LAWS 4606 [0.5] International Law of Armed Conflict	

LAWS 4607 [0.5] Immigration and Refugee Law

B. Credits Not Included in the Major CGPA (8.0 credits)

4. **8.0 credits in:** free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

**Stream in Global Law and Social Justice
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. **4.0 credits in:** Core Courses 4.0

GINS 1000 [0.5] Global History

GINS 1010 [0.5] International Law and Politics

GINS 1020 [0.5] Ethnography, Globalization and Culture

GINS 2000 [0.5] Ethics and Globalization

GINS 2010 [0.5] Globalization and International Economic Issues

GINS 2020 [0.5] Global Literatures

GINS 3010 [0.5] Global and International Theory

GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change

2. **4.0 credits from:** the Stream 4.0

a. Foundations

LAWS 1001 [0.5] Introduction to Legal Studies 1

LAWS 1002 [0.5] Introduction to Legal Studies 2

b. Research Methodologies

LAWS 2908 [0.5] Methodological Approaches in Legal Studies 1

c. Second Year Core Courses

HUMR 2001 [0.5] Human Rights: Theories and Foundations

LAWS 2105 [0.5] Social Justice and Human Rights

LAWS 2601 [0.5] Public International Law

d. Third Year Core Courses

LAWS 3602 [0.5] International Human Rights

LAWS 3604 [0.5] International Organizations

e. Global Law and Social Justice

HUMR 3002 [0.5] Right to the City

HUMR 3301 [0.5] Racialization, Racism and Human Rights

HUMR 3302 [0.5] Culture, Religion, and Women's Human Rights

HUMR 3401 [0.5] Histories of Persecution and Genocide

HUMR 3501 [0.5] Social, Economic and Cultural Rights

HUMR 3503 [0.5] Global Environmental Justice

HUMR 3504 [0.5] Public Health and Human Rights

LAWS 3207 [0.5] International Transactions

LAWS 3208 [0.5] International Trade Regulation

LAWS 3503 [0.5] Equality and Discrimination

LAWS 3504 [0.5] Law and Aboriginal Peoples

LAWS 3509 [0.5] The Charter of Rights Topics

B. Credits Not Included in the Major CGPA (7.0 credits)

3. **7.0 credits in:** Free Electives 7.0

C. Additional Requirements

4. The language requirement must be met.

Total Credits 15.0

Minor in Law (4.0 credits)

The Minor in Law is open to all students registered in undergraduate programs, with the exception of students registered in the B.A. in Law, the B.A. in Criminology and Criminal Justice with a concentration in Law, or the B.G.In.S. Specialization or Stream in Global Law and Social Justice.

Requirements:

1. **1.0 credit in:** 1.0

LAWS 1001 [0.5] Introduction to Legal Studies 1

LAWS 1002 [0.5] Introduction to Legal Studies 2

2. **2.0 credits from:** 2.0

LAWS 2105 [0.5] Social Justice and Human Rights

LAWS 2201 [0.5] Persons and Property

LAWS 2202 [0.5] Obligations

LAWS 2301 [0.5] Criminal Justice System

LAWS 2302 [0.5] Criminal Law

LAWS 2501 [0.5] Law, State and Constitution

LAWS 2502 [0.5] Law, State and Citizen

LAWS 2601 [0.5] Public International Law

3. **1.0 credit in LAWS** at the 3000-level or higher 1.0

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits 4.0

Mention : français : Law (4.0 credits)

Students wishing to qualify for the *Mention : français* notation in Law may do so by taking the following pattern of courses in their degree program:

Mention : Français Law

1. **1.0 credit in** the advanced study of the French language: 1.0

FREN 2100 [1.0] French 4

2. **1.0 credit in** French-Canadian culture and heritage: 1.0

FREN 2202 [0.5] Introduction aux études littéraires 1

FREN 2203 [0.5] Introduction aux études littéraires 2

FREN 2401 [1.0] Introduction à la linguistique française

3. **1.0 credit at** the 2000 or 3000 level in law or legal studies taught in French at the university level, and approved by the Undergraduate Supervisor 1.0

4. In addition, for B.A. (Honours) Law, Combined B.A. (Honours) Law, or B.G.In.S. (Honours) with a Specialization in Global Law and Social Justice, 1.0 credit at the 4000 level in law or legal studies taught in French at the university level, and approved by the Undergraduate Supervisor

Total Credits 4.0

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult

the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS,

INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student

be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after

their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer

8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Law: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Arts Honours - Law program (with or without a concentration);
2. Obtained an overall CGPA of 9.00 and major CGPA of 9.00;
3. Completed 3.5 credits in Law, including LAWS 2908, prior to their first work term. It is strongly recommended that students complete all first and second year Law requirements prior to entering their first work term.

Students in B.A. Honours Law (with or without a concentration) must successfully complete three (3) work terms to obtain the Co-op designation.

Co-operative Work Term Course: LAWS 3999 Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W	Winter	
Summer		Summer	W	Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English

language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in

Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Law (LAWS) Courses

Note: some graduate courses may also be open to interested fourth-year students with permission of the Department.

LAWS 1001 [0.5 credit]

Introduction to Legal Studies 1

Introduction to legal studies: concepts, sources, nature and functions of law; historical, cultural and constitutional foundations of Canadian legal system; common and civil law traditions; statutory interpretation; precedent; legal institutions; frameworks for analyzing formal and informal conceptions of law and its role in society.

Precludes additional credit for LAWS 1000 (no longer offered).

Lectures and discussion three hours a week.

LAWS 1002 [0.5 credit]

Introduction to Legal Studies 2

Introduction to legal rules and theoretical approaches for critically understanding the creation, interpretation and enforcement of those rules; the role of judges, juries, lawyers, and lay persons; adjudication and alternative dispute resolution; relationship of law with social change and justice; challenges of access to justice.

Precludes additional credit for LAWS 1000 (no longer offered).

Lectures and discussion three hours a week.

LAWS 2105 [0.5 credit]

Social Justice and Human Rights

Theories and practices of law and social justice. Issues examined may include: civil democracy and repression; global governance and the rule of law; democratic movements and social power; human rights instruments, regimes and remedies; armed conflict; and humanitarian intervention.

Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, or HUMR 1001 [1.0], or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2201 [0.5 credit]

Persons and Property

Origins and scope of the concept of person in law and how concepts of legal personality change over time. Origins and scope of the concept of property and how concepts of property change over time.

Precludes additional credit for LAWS 2003 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2202 [0.5 credit]

Obligations

The concepts employed by the law for creating and enforcing legal obligations between persons within society, including contract, tort, fiduciary obligation and restitution. Consideration is given to the role of persons and the role of the state in ordering private legal obligations.

Precludes additional credit for LAWS 2003 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2301 [0.5 credit]

Criminal Justice System

The institutional and social production of criminal law in Canada. Processes, personnel, and agencies in the criminal legal system. The role of discretion and mechanisms of accountability. The accused and the place of the victim. Issues and problems in sentencing and punishment.

Precludes additional credit for LAWS 2004 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2302 [0.5 credit]

Criminal Law

The legal and social dimensions of criminal liability and responsibility in Canada, including issues and problems surrounding mens rea, actus reus, and the attachment of liability. Excuses and justifications, the Canadian Criminal Code and the role of the Charter in the criminal legal system.

Precludes additional credit for LAWS 2004 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2501 [0.5 credit]**Law, State and Constitution**

Law relating to the state, society and the constitution, with a focus on the historical framework, federalism, and constitutional reform in Canada.

Precludes additional credit for LAWS 2005 (no longer offered).

Prerequisite(s): 1.0 credit from LAWS 1001 and LAWS 1002 or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2502 [0.5 credit]**Law, State and Citizen**

Law relating to the state and its relationship to individuals and groups in society, with a focus on the administrative process, basic values and the Charter.

Precludes additional credit for LAWS 2005 (no longer offered).

Prerequisite(s): 1.0 credit from LAWS 1001 and LAWS 1002 or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2601 [0.5 credit]**Public International Law**

Examination of the role of law in contemporary international relations. Nature, history and sources of international law; international personality of states; status of international organizations and individuals; creation and effect of international obligations; importance and functions of law in the settlement of international disputes. Precludes additional credit for LAWS 3603 (no longer offered).

Prerequisite(s): 1.0 credit from LAWS 1001 and LAWS 1002 or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2908 [0.5 credit]**Methodological Approaches in Legal Studies 1**

Introduction to the legal research process and analysis of legal methodology; finding and analyzing primary and secondary legal sources. Students are strongly encouraged to take this course in the second year of their program.

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures and tutorials three hours a week.

LAWS 3001 [0.5 credit]**Women and the Legal Process**

How the legal process has affected the status of women. Areas of concentration within the Canadian context include the criminal law, citizenship and immigration, education, employment, and welfare and social services.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3003 [0.5 credit]**Contracts**

The enforcement of promises and agreements; basic doctrines and underlying principles of the law of contract are studied from formation of the contract to remedies for breach of contract; role of contract for economic and social purposes is also considered.

Prerequisite(s): LAWS 2202 and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3005 [0.5 credit]**Law and Regulation**

Definitions and goals of regulation; contemporary theories and debates about legal and non-legal approaches to regulation. Approaches studied may include market mechanisms, public agency regulation, self-regulation and governance in co-operation with associations in civil society.

Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502.

Lectures three hours a week.

LAWS 3006 [0.5 credit]**Mediation**

Theory and practice of mediation; historical roots and influences; contrasts with formal litigation and other dispute resolution processes; issues of social and legal control; critiques, including feminist, Marxist and critical race theory; issues of power, gender, race and class; application to contemporary issues and disputes.

Prerequisite(s): (LAWS 1001 and LAWS 1002) and (1.0 credit in LAWS at the 2000 level or 0.5 credit in LAWS at the 2000 level and BUSI 2601).

Lectures three hours a week.

LAWS 3101 [0.5 credit]**Philosophy of Law: The Nature of Law**

The concept of law, leading theories of law and related concepts such as rules and obligations, power and authority, coercion, and justice.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3102 [0.5 credit]**Philosophy of Law: The Logic of the Law**

Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession.

Also listed as PHIL 3102.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3103 [0.5 credit]**Law, Culture, and the Humanities: A Foundation**

Themes, approaches and debates in the field of law, culture and the humanities. Primary materials considered may include theoretical writings/cultural criticism/literary texts/films/video/photography and music. These texts present different modes and means of inquiring into the assumptions and aspirations that we ascribe to law.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3104 [0.5 credit]**Critical Theory for Legal Studies: An Introduction**

Introduction to the general contours of critical theory as it pertains to law and legal studies. The course will introduce key concepts and controversies in the field, identify specific theoretical debates, and consider what conceptual consequences follow from the elaboration of specific positions or arguments.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3105 [0.5 credit]**Theory of Law and Politics**

Theories of law and politics; prominent thinkers and schools of thought; influence on legal and political institutions. Topics include law and ethics, justice and equity, positivism and natural law, state absolutism, codifications, and anthropological and historical theories of law and society.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level, or 0.5 credit in LAWS at the 2000 level and PSCI 1100.

Lectures three hours a week.

LAWS 3106 [0.5 credit]**Law and Social Regulation**

A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict.

Also listed as SOCI 3480.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3201 [0.5 credit]**Business Enterprise Frameworks**

Forms of carrying on business activity: proprietorships, partnerships, corporations and Crown entities. The rights and obligations of such business enterprises both internally and in relation with other persons. The relationship between legal form and economic function. The role of state intervention.

Prerequisite(s): LAWS 2201 and LAWS 2202.

Lectures three hours a week.

LAWS 3202 [0.5 credit]**Intellectual Property**

Critical assessment of copyright, patents, trademarks, trade secrets and other forms of intellectual property; regulation and governance of information technology including self-regulation, standard setting, licensing, competition policy and international dimensions.

Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502.

Lectures three hours a week.

LAWS 3203 [0.5 credit]**The Legal Nature of Property**

An examination of the nature and functions of property as a legal and social institution, with particular reference to theories of property, the scope of property interests, and the relationship between individual property rights and the state.

Prerequisite(s): LAWS 2201 and LAWS 2202.

Lectures three hours a week.

LAWS 3205 [0.5 credit]**Consumer Law**

Need for consumer protection in the provision of goods and services; traditional legal protection by statute and common law; legislative responses to consumer pressures; judicial response in recent Canadian, English and American law; reform of consumer law.

Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3206 [0.5 credit]**Banking Law**

The law relating to banks and banking; the nature of the legal relationship created; legal rights and duties of the parties involved. Consumer and corporate aspects of banking (including computerization and electronic funds transfers); regulations of banking.

Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3207 [0.5 credit]**International Transactions**

Topics may include: the international sale of goods, finance of transnational transactions, international carriage of goods, insurance, agency and trading houses; other forms of trade, e.g., counter-trade, foreign investment; settlement of international disputes by litigation and arbitration.

Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3208 [0.5 credit]**International Trade Regulation**

International regulation of trade and investment through bilateral, regional and multilateral treaties and agreements. Topics may include: WTO, NAFTA, the EU, UNCTAD, intergovernmental commodity agreements, dispute settlement.

Prerequisite(s): (0.5 credit from LAWS 2202, LAWS 2501, LAWS 2601, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3209 [0.5 credit]**Canadian Correctional Policies in Historical Perspective**

History of corrections in Canada in the context of the international evolution of western penal systems, Canadian corrections in the twentieth century and expansion of alternatives to prison after WWII; criminological debates about the theoretical and empirical significance of historical milestones in corrections.

Prerequisite(s): LAWS 2301 and LAWS 2302.

Lectures three hours a week.

LAWS 3303 [0.5 credit]**Torts**

Principles of legal liability for harm caused to the person or property of others; examination of policy rationales justifying and limiting liability; responsiveness to changing social values and conditions. Particular focus on negligence law; may also consider nuisance, intentional torts and other topics.

Prerequisite(s): LAWS 2201 and LAWS 2202.

Lectures three hours a week.

LAWS 3305 [0.5 credit]**Crime and State in History**

The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada.

Also listed as HIST 3305.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level, or 0.5 credit in LAWS at the 2000 level and 0.5 credit in HIST at the 2000 level.

Lectures three hours a week.

LAWS 3306 [0.5 credit]**Crime, Law, Process and Politics**

Criminal law process in Canada; structure and use of the process examined for fairness, defects, and possible reform initiatives. Issues concerning gender, race and class bias in the implementation and application of the criminal law.

Prerequisite(s): LAWS 2301 and LAWS 2302.

Lectures three hours a week.

LAWS 3307 [0.5 credit]**Youth and Criminal Law**

A review of the Youth Criminal Justice Act within the framework of the Canadian justice system, with particular emphasis on historical and philosophical developments and objectives. Current topics include: constitutional issues, procedure, confessions, transfers, sentencing options, alternative measures, reviews, and possible amendments.

Prerequisite(s): LAWS 2301 and LAWS 2302.

Lectures three hours a week.

LAWS 3308 [0.5 credit]**Punishment and the Law**

This course explores justifications and practices of punishment and social control from a socio-legal perspective. Rationalizations and justifications for punishment are considered. Different forms of punishment and control within the law will be examined as well as different theoretical perspectives of punishment.

Prerequisite(s): LAWS 2301 and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3401 [0.5 credit]**Employment Law**

Legal regulation of the employment relationship; its contractual basis; defining employment; rights and duties of employees and employers; termination of employment; statutory regulation through employment standards legislation, human rights codes, workers' compensation acts, occupational health and safety and related statutes.

Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3405 [0.5 credit]**Labour Law**

Role of law in industrial relations; effect of law on collective bargaining relationships; recognition of bargaining agent; regulation of bargaining; administration of the collective agreement; methods of conflict resolution.

Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3500 [0.5 credit]**Constitutional Law**

An investigation of the Canadian constitution. Sovereignty, the nature and units of executive, legislative, and judicial power in Canada as interpreted by the courts. The distribution of powers under the Canadian constitution, including an investigation of contemporary problems of federalism. Problems of judicial review.

Prerequisite(s): (LAWS 2501 or PSCI 2003) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3501 [0.5 credit]**Law in the Information Society**

Legal responses to challenges of the information society. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, control of objectionable content, Charter and human rights issues, and security.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3502 [0.5 credit]**Regulating Freedom of Expression in Canada**

The claimed relationship between freedom of expression and Canadian democracy, including the historical development of the right and various limits on it, and the regulatory structures governing contemporary media, criminalized and commercial expression, and use of media in the courtroom.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3503 [0.5 credit]**Equality and Discrimination**

Human rights issues and law in Canada; history and present day experiences of discrimination; critical exploration of laws effectiveness in responding to discrimination; meaning(s) of equality and discrimination; focus on Human Rights Codes - interpretation, administration, enforcement with some reference to s.15 of the Charter.

Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3504 [0.5 credit]**Law and Aboriginal Peoples**

The legal situation of aboriginal peoples in Canada. Topics include status, aboriginal rights, treaties, legislative jurisdiction and the constitutional framework, aboriginal claims, and self-government. Comparative references to aboriginal policy in other countries.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3506 [0.5 credit]**Administrative Law**

Structure and procedure of Canadian administrative authorities; policy, statutory and judicial environments in which they operate. Topics include techniques for implementing public policy and structuring public authorities; statutory interpretation; procedural safeguards; exercise of statutory discretion; reconciling efficiency and fairness.

Prerequisite(s): LAWS 2502 and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3508 [0.5 credit]**Health Law**

Legal/ethical issues in health care regulation. Topics may include: regulation of health professions; economics of health care; informed consent/choice; regulation of drugs, devices and research; medical malpractice and other liability; mental health issues; patient/client records.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3509 [0.5 credit]**The Charter of Rights Topics**

Selected issues in the Canadian Charter of Rights and Freedoms. The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): (0.5 Credit from LAWS 2105, LAWS 2201, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3602 [0.5 credit]**International Human Rights**

The developing international law relating to the protection of human rights. General concepts, rules and institutions. Specific issues include self-determination, aboriginal rights, the refugee problem, and torture. The inherent problems and overall potential of international law.

Precludes additional credit for LAWS 4604 (no longer offered).

Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2502, LAWS 2601 or HUMR 2001) and 0.5 credit in LAWS at the 2000 level or PAPM 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 3604 [0.5 credit]**International Organizations**

Nature, character, legal status and jurisdiction of intergovernmental international organizations. Rights and duties of states arising from membership in international organizations. Distinction between international and supra-national institutions. United Nations system, selected subsidiary organs, and specialized agencies; non-governmental organizations at times of crisis.

Prerequisite(s): LAWS 2601 and 0.5 credit in LAWS at the 2000 level or PAPM 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 3800 [0.5 credit]**Law of Environmental Quality**

Various aspects of environmental law; pollution control, legal actions and remedies; legal foundations for participation in decision-making processes. Social, economic and political forces influencing the formulation and implementation of environmental law. Alternative forms of regulation that may articulate different demands.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3804 [0.5 credit]**Law of the Family**

Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.

Also listed as SOWK 3804.

Prerequisite(s): LAWS 2201 and LAWS 2202.

Lectures three hours a week.

LAWS 3903 [0.5 credit]**Selected Legal Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3904 [0.5 credit]**Selected Legal Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): 1.0 credit in LAWS at the 2000-level.

Lectures three hours a week.

LAWS 3908 [0.5 credit]**Methodological Approaches in Legal Studies 2**

Advanced approaches to interdisciplinary research and analysis in law and legal studies. Methodological approaches considered will vary by section, and may include theoretical, quantitative, qualitative, literary, or historical approaches.

Prerequisite(s): LAWS 2908 and third-year Honours standing. Honours students are strongly encouraged to take this course in the third year of their program.

Lectures three hours a week.

LAWS 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A. Honours (concentration in Business Law or concentration in Law, Policy and Government) Cooperative Program, completion of Co-op preparation classes offered by the Co-op office and permission of the Department.

LAWS 4001 [0.5 credit]**Law, Family and Gender**

Relationship between family law and ideology of the family, gender roles and the reproduction of family structures. Social ramifications of family law; potential for family law reform as an agency of social change.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3001 or LAWS 3804, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4002 [0.5 credit]**Feminist Theories of Law**

The literature comprising feminist perspectives on law; theoretical bases of these perspectives; place of feminist theories within other critiques of law; significance of different feminist theories for equality theory and law reform strategies; unique contributions of the various perspectives.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4006 [0.5 credit]**Religion and State in Canada**

Legal nature of the interaction of religion and state within an historical framework. Emphasis on Canada after the Charter of Rights and Freedoms and on religious pluralism and resistance to state intervention in religion. Interdisciplinary readings drawn from legal, historical and theological sources.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4100 [0.5 credit]**Modern Legal Theory**

Realist and post-realist legal scholarship; emphasis on Canadian, American and British approaches. Topics include the Canadian treatise tradition, American legal realism, empirical approaches to legal problems, the sociological movement in law, critical and Canadian feminist legal scholarship, Marxian theories of law, normative economic theory.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4101 [0.5 credit]**Contemporary Justice Theories**

Selected major contemporary theories of justice such as those associated with Rawls, Walzer, and Habermas, with emphasis on both their procedural and substantive elements and their concrete ramifications for law, policy and political practice.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4102 [0.5 credit]**Controversies in Rights Theory**

This course examines selected controversies in rights theories, practices, and/or historiography. Illustrative questions may include: Are rights universal or culturally relative? Can rights be justified after the demise of natural rights philosophy? Do rights undermine difference? Do communities benefit from a rights-based culture?.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4103 [0.5 credit]**Special Topic in the Philosophy of Law**

Detailed study of a special topic in philosophy of law.

Also listed as PHIL 4407.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4104 [0.5 credit]**Special Topic in the Philosophy of Law**

Detailed study of a special topic in philosophy of law.

Also listed as PHIL 4408.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4105 [0.5 credit]**Global Justice Theory**

Selected theories of global justice as they pertain to legality, which may include questions such as the justice of military force and just war theory, global social justice and global inequality, sovereignty and cosmopolitan conceptions of justice, demands for global democracy and human rights.

Prerequisite(s): LAWS 2105, LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4106 [0.5 credit]**Law and Violence**

Examination of how law defines, justifies, and addresses individual, collective and state violence: contemporary and historical case studies; theoretical inquiries into the relationship between law, legality and different forms of violence.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4107 [0.5 credit]**Law in Modern Society**

Sociological and legal theory accounts of the changing role and function of law in modern society with particular reference to advanced capitalist societies. Topics include: the welfare state and the use of regulatory law; juridification and legalization; counter-trends, deregulation, informalism, legal pluralism.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4200 [0.5 credit]**International Economic Law**

Selected topics in international economic law. May include: the legal regulation of international economic activity; methods of dispute settlement; standardization and development of an autonomous international trade law; and selected conventions and institutions governing international economic law.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3207 or LAWS 3208, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4202 [0.5 credit]**Accountability of Management**

Role, function, and legal regulation of persons managing business enterprises. Status, social responsibility, fiduciary obligations and rights. Control and accountability of managers, obligations owed to the enterprise unit itself, constitutional rights of members, standards imposed by statutory regulation.

Prerequisite(s): LAWS 2908, LAWS 3201 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4204 [0.5 credit]**Legal Issues in eCommerce**

An examination of selected legal topics relevant to the conduct of electronic commerce. Topics include types of regulation, government support, jurisdiction challenges, contract disputes and consumer protection. Court and alternative dispute resolution policy of Domain Names challenges are also included.

Prerequisite(s): LAWS 2908, LAWS 2201, LAWS 2202 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4209 [0.5 credit]**Topics in Business Law**

Examination of a selected advanced topic in business law. The topics of this course may vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 2201 or LAWS 2202, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4302 [0.5 credit]**Regulation of Corporate Crime**

Legal, policy and theoretical perspectives on the regulation of corporate crime. Nature and causes of corporate crime. Selected case studies on the role of the state in regulating corporate behaviour. Failure of the criminal justice system to respond to corporate crime.

Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4303 [0.5 credit]**Drugs, The User and The State**

This course explores the state's attempts to control drugs and drug users by exploring different aspects of national and international drug control. The Canadian experience of drug control, viewed from different perspectives, will be explored within a broader socio-legal context.

Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4304 [0.5 credit]**Policing and Social Surveillance**

Theoretical consideration of the emergence and transformation of “policing” activities through an examination of law and changes in social relations, with special attention to the myriad agencies involved in contemporary security provision. Evolving notions of risk, surveillance, the state, and the private-public dichotomy. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4305 [0.5 credit]**Criminal Justice Reform**

Social transformation and criminal justice reform. Theoretical and practical reasons for the use of criminal law as an instrument of social control. Specific reform initiatives and processes. Alternate responses to social problems. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4306 [0.5 credit]**Criminal Law Issues**

Selected issues and problems in the area of criminal law. The topics may vary from year to year depending on demand and interest and are announced in advance of registration. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4307 [0.5 credit]**Medical Criminal Law Issues**

Legal-medical issues, conflicts and relationships in the field of social control. Topics include mental disorder and criminal liability, diversion of offenders to civil commitment in hospital, insanity, automatism, fitness to stand trial, prediction of dangerousness, regulation of psychoactive drugs. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4308 [0.5 credit]**Sentencing**

Theories of sentencing, current sentencing laws and practices, perceptions of sentencing. Data on sentencing practice across Canada. Reforms in other jurisdictions. Critical review of the Canadian Sentencing Commission. Multidisciplinary approach using research and theory in law, criminology, social psychology and sociology. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4309 [0.5 credit]**State Security and Dissent**

Historical and contemporary analysis of legal responses of Canadian governments to dissent, political opposition, insurrection, etc. Includes trial of political offences (treason, sedition, riot), national security measures (War Measures/Emergencies Act, Official Secrets Act), and other special powers (police, labour, immigration, parliamentary privilege, etc.). Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and 0.5 credit from LAWS 3305, LAWS 3503, LAWS 3509, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4311 [0.5 credit]**Human Rights in Canadian Prisons**

Correctional law in the Canadian criminal justice system; competing objectives of punishment and rehabilitation in the context of respect for the rule of law and human rights; protection of human rights of prisoners in Canada and in international and comparative contexts. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4402 [0.5 credit]**Employment Dispute Resolution**

Theory and practice of dispute resolution in employment relations; analysis of such techniques as negotiation, grievance and interest arbitration, mediation, investigation and litigation applied to a range of employment disputes such as collective agreements, termination of employment, discrimination, harassment, occupational health and safety. Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3006, LAWS 3401, LAWS 3405, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4503 [0.5 credit]**Law, Disability and Society**

Exploration of the ways in which law promotes or hinders the inclusion of disabled persons in society. Consideration of different theories of 'disability' and the creation of barriers faced by disabled persons. Topics may include barriers affecting education, employment, transportation, benefits, and life/death decisions. Prerequisite(s): LAWS 2908 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4504 [0.5 credit]**Indigenous Criminal Justice**

Indigenous peoples and the administration of Canadian criminal justice including policing, courts, corrections and aftercare. Content and effects of past and present policies, processes and laws. Alternatives such as self-government and self-determination; potential approaches to an appropriate justice system for Indigenous peoples. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4507 [0.5 credit]**Administrative Law and Control**

Examination of characteristics and selected problems of control of administrative action. Topics include: varieties of traditional and constitutional, legal and judicial control, impact of the Charter, reforms to administrative law control systems in Canada, and comparisons with developments outside Canada.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3005 or LAWS 3506, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4510 [0.5 credit]**Topics in Law, Policy and Government**

Examination of a selected advanced topic in the area of law, policy and government. The topics of this course may vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2501, LAWS 2502, LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4601 [0.5 credit]**Transnational Law and Human Rights**

Examination of the role of law in addressing human rights issues that transcend traditional categories of domestic and international law; the potential and limits of law in addressing human rights issues; the growth of transnational approaches to law and human rights.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3503 or LAWS 3602, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4602 [0.5 credit]**Is Religious Freedom a Human Right?**

Legal, theoretical, and theological interconnections between religion and human rights. Evaluation of concepts including religious freedom, secularism, public sphere, accommodation and neutrality. Examination of religion and culture, interdependence of legal and religious perspectives, boundaries of religion and state, and religious compulsion. Use of case studies.

Also listed as HUMR 4602, RELI 4602.

Prerequisite(s): LAWS 2908, LAWS 3602, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4603 [0.5 credit]**Transitional Justice**

Legal and ethical responses to human rights violations in the transition to democracy. Dilemmas of the rule of law; truth and reconciliation; prosecution and punishment; amnesty; retribution and revenge; restorative justice; administrative remedy; reparations; International case studies. Theoretical arguments about justice in context of country.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4605 [0.5 credit]**Topics in International Law**

Topics vary from year to year and are announced in advance. May include transnational environmental issues; the international law of armed conflict, peacekeeping and neutrality; the law of international treaties and transnational agreements; state responsibility under international law.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4606 [0.5 credit]**International Law of Armed Conflict**

UN Charter prohibition of the use of force. Exceptional, permissible uses of armed force. Role of Security Council in determining legality of armed intervention. Collective security, peacemaking, peacekeeping, neutrality, prohibited means of warfare. Humanitarian International Law, Geneva Red Cross Conventions, war crimes, International Criminal Court.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4607 [0.5 credit]**Immigration and Refugee Law**

Immigrants and refugees; demographics; Canadian, international and human rights law and policy. The Canadian Immigration Act. Legal and social problems including entry and removal, family reunion, citizenship, remedies, the rights of clandestine migrants; settlement rights; non-discrimination; asylum; a nation's right to determine membership.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2502 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4610 [0.5 credit]**Special Topics in Transnational Law and Human Rights**

Examination of a selected advanced topic in the area of transnational law and human rights. The topics of this course may vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4701 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the Department of Law.

Also listed as SOWK 4701.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4702 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced.

Also listed as SOWK 4702 and SOCI 4702.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4703 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the School of Social Work.

Also listed as SOWK 4703.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4800 [0.5 credit]**Environment and Social Justice**

The potential of environmental law to protect the environment and people while promoting opportunities for informed participation in environmental decision making by groups traditionally excluded from these processes; contemporary issues of social justice raised by legal regulation of the environment.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4801 [0.5 credit]**Risk and the Legal Process**

Application of risk assessment and management in various legal arenas including insurance, liability and tort, litigation management, environmental protection, and sentencing and parole.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4802 [0.5 credit]**Criminal Jury Trials**

Critical analysis of the criminal jury system including its history and context, the role of the judge, jury dynamics and jury composition. Perspectives and roles of the accused, victims, police, defence counsel, Crown attorney, judges, juries, media, politicians and the public.

Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4901 [0.5 credit]**Tutorial in Law**

Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department).

Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor. Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4902 [0.5 credit]**Tutorial in Law**

Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department).

Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor. Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4903 [0.5 credit]**Advanced Legal Topics**

The topics of this course vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4904 [0.5 credit]**Advanced Legal Topics**

The topics of this course vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4905 [1.0 credit]

Full-Year Service Learning Placement

This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department).

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization. Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.

LAWS 4906 [0.5 credit]

Service Learning Placement

This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department).

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization. Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.

LAWS 4908 [1.0 credit]

Honours Paper

Students in the BA Honours Law program may write an Honours paper under the supervision of a faculty member of the Department of Law (guidelines are posted by the Department). Students intending to undertake graduate studies are encouraged to complete an Honours paper.

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 3908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher and written acceptance by a faculty member.

Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

Linguistics (Bachelor of Arts)

This section presents the requirements for programs in:

- Linguistics B.A. Honours
- B.A. Honours in Linguistics with a Concentration in Linguistic Theory
- B.A. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders
- Linguistics B.A. Combined Honours
- Linguistics and Discourse Studies B.A. Combined Honours
- Linguistics B.A.
- Minor in Linguistics

Linguistics

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.5 credits)

1. 1.5 credit in:		1.5
LING 1001 [0.5]	Introduction to Linguistics I	
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS	
LING 1002 [0.5]	Introduction to Linguistics II	
2. 1.0 credit in:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
3. 2.0 credits in:		2.0
LING 3004 [0.5]	Syntax I	
LING 3005 [0.5]	Morphology I	
LING 3007 [0.5]	Phonology I	
LING 3505 [0.5]	Semantics	
4. 2.0 credits in LING at the 4000 level		2.0
5. 3.0 credits in LING, excluding LING 1100		3.0
B. Credits Not Included in the Major CGPA (10.5 credits)		
6. 5.0 credits not in LING or ALDS		5.0
7. 5.5 credits in free electives (maximum 2.5 credits in LING)		5.5
C. Additional Requirements		
8. School Language Proficiency Requirement must be satisfied		
Total Credits		20.0

B.A. Honours in Linguistics

with a Concentration in Linguistic Theory (20.0 credits)

A. Credits Included in the Major CGPA (9.5 credits)

1. 1.0 credit in:		1.0
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS	
LING 1001 [0.5]	Introduction to Linguistics I	
2. 1.0 credit in:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
3. 1.0 credit in:		1.0
LING 3004 [0.5]	Syntax I	
LING 3007 [0.5]	Phonology I	
4. 1.0 credit in LING at the 4000 level		1.0
5. 2.0 credits in LING, excluding LING 1100		2.0
6. 3.5 credits in Degree Concentration:		3.5
a. 1.0 credit in:		
LING 3005 [0.5]	Morphology I	
LING 3505 [0.5]	Semantics	
b. 1.0 credit from:		
LING 4004 [0.5]	Syntax II	
LING 4005 [0.5]	Morphology II	
LING 4007 [0.5]	Phonology II	
LING 4505 [0.5]	Formal Semantics	
LING 4510 [0.5]	Lexical Semantics	
c. 1.5 credits in LING, excluding LING 1100		
B. Credits Not Included in the Major CGPA (10.5 credits)		

7. 5.0 credits not in LING or ALDS	5.0
8. 3.0 credits not in LING	3.0
9. 2.5 credits in free electives	2.5

C. Additional Requirements

9. School Language Proficiency Requirement must be satisfied.

Total Credits **20.0**

B.A. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (20.0 credits)

A. Credits Included in the Major CGPA (9.5 credits)

1. 1.0 credit in: 1.0

ALDS 1001 [0.5] Language Matters: Introduction to ALDS

LING 1001 [0.5] Introduction to Linguistics I

2. 1.0 credit in: 1.0

LING 2005 [0.5] Linguistic Analysis

LING 2007 [0.5] Phonetics

3. 1.0 credit in: 1.0

LING 3004 [0.5] Syntax I

LING 3007 [0.5] Phonology I

4. 1.0 credit in LING at the 4000 level 1.0

5. 2.0 credits in LING, excluding LING 1100 2.0

6. 3.5 credits in Degree Concentration: 3.5

a. 0.5 credit in:

LING 1002 [0.5] Introduction to Linguistics II

b. 2.0 credits in:

LING 2604 [0.5] Communication Differences and Disabilities I

LING 3601 [0.5] Language Processing and the Brain

LING 3603 [0.5] Child Language

LING 3604 [0.5] Communication Differences and Disabilities II

c. 1.0 credit from:

LING 4601 [0.5] Cognitive Neuroscience of Language

LING 4603 [0.5] First Language Acquisition

LING 4605 [0.5] Psycholinguistic Research Methods

LING 4606 [0.5] Statistics for Language Research

B. Credits not Included in the Major CGPA (10.5)

7. 5.0 credits not in LING or ALDS 5.0

8. 3.0 credits not in LING 3.0

9. 2.5 credits in free electives 2.5

C. Additional Requirements

9. School Language Proficiency Requirement must be satisfied

Total Credits **20.0**

Linguistics

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit in: 1.0

LING 1001 [0.5] Introduction to Linguistics I

ALDS 1001 [0.5] Language Matters: Introduction to ALDS

2. 1.0 credit in: 1.0

LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
3. 2.0 credits in:		2.0

LING 3004 [0.5] Syntax I

LING 3005 [0.5] Morphology I

LING 3007 [0.5] Phonology I

LING 3505 [0.5] Semantics

4. 1.0 credit in LING at the 4000-level 1.0

5. 1.0 credit in LING, excluding LING 1100 1.0

B. Additional Requirements (14.0 credits) 14.0

6. The requirements of the other discipline must be satisfied

7. Sufficient free electives to make a total of 20.0 credits for the program

8. School Language Proficiency Requirement must be satisfied

Total Credits **20.0**

Linguistics and Discourse Studies

B.A. Combined Honours (20.0 credits)

Honours Linguistics and Honours Applied Linguistics and Discourse Studies are combined into the Linguistics and Discourse Studies B.A. Combined Honours.

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.5 credits in: 1.5

LING 1001 [0.5] Introduction to Linguistics I

ALDS 1001 [0.5] Language Matters: Introduction to ALDS

LING 1002 [0.5] Introduction to Linguistics II

2. 1.0 credit in: 1.0

LING 2005 [0.5] Linguistic Analysis

LING 2007 [0.5] Phonetics

3. 2.0 credits in: 2.0

LING 3004 [0.5] Syntax I

LING 3005 [0.5] Morphology I

LING 3007 [0.5] Phonology I

LING 3505 [0.5] Semantics

4. 1.0 credit in LING at the 4000 level 1.0

5. 1.0 credit in LING, excluding LING 1100 1.0

6. 1.0 credit in: 1.0

ALDS 2201 [0.5] Analysis of Oral Language Use

ALDS 2202 [0.5] Analysis of Written Language Use

7. 1.0 credit in ALDS at the 3000 level or above 1.0

8. 1.0 credit in ALDS at the 4000 level 1.0

9. 2.5 credits in ALDS 2.5

B. Additional Requirements (8.0 credits) 8.0

10. Sufficient free electives to make a total of 20.0 credits for the program

11. School Language Proficiency Requirement must be satisfied

Total Credits **20.0**

Linguistics

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.5 credits)

1. 1.5 credit in: 1.5

LING 1001 [0.5] Introduction to Linguistics I

ALDS 1001 [0.5]	Language Matters: Introduction to ALDS	
LING 1002 [0.5]	Introduction to Linguistics II	
2. 1.0 credit in:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
3. 2.0 credits in:		2.0
LING 3004 [0.5]	Syntax I	
LING 3005 [0.5]	Morphology I	
LING 3007 [0.5]	Phonology I	
LING 3505 [0.5]	Semantics	
4. 2.0 credits in LING, excluding LING 1100		2.0
B. Credits Not Included in the Major CGPA (8.5 credits)		
5. 5.0 credits not in LING or ALDS		5.0
6. 1.0 credit not in LING		1.0
7. 2.5 credits in free electives		2.5
C. Additional Requirement		
8. School Language Proficiency Requirement must be satisfied		
Total Credits		15.0

Minor in Linguistics (4.0 credits)

Open to all undergraduate degree students in programs other than Linguistics.

Requirements (4.0 credits)

1. 1.0 credit in:		1.0
LING 1001 [0.5]	Introduction to Linguistics I	
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS	
2. 1.0 credit in:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
3. 1.0 credit in:		1.0
LING 3004 [0.5]	Syntax I	
LING 3007 [0.5]	Phonology I	
4. 1.0 credit in LING, excluding LING 1100		1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

School Language Proficiency Requirement

Students in B.A. Honours, Combined Honours, or 15 credit programs of the School of Linguistics and Language Studies are required, at graduation, to have a working knowledge of a language other than English. Proficiency is determined by successful completion of a 1.0 credit university course in the language or by an oral or written test given by the School.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry

and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow

the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French,

Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Linguistics (LING) Courses

LING 1001 [0.5 credit]

Introduction to Linguistics I

Nature of language and linguistic knowledge. Formal description and analysis of language: phonetics, phonology, morphology, syntax and semantics. Lecture and tutorial three hours a week.

LING 1002 [0.5 credit]

Introduction to Linguistics II

Survey of topics in linguistics: language change, sociolinguistics, language acquisition and processing. May include language typology, language contact and writing systems.

Prerequisite(s): LING 1001 (may be taken concurrently). Lectures three hours a week.

LING 1100 [0.5 credit]

The Mysteries of Language

This course explores some intriguing mysteries of language - whether it is unique to humans, how children master its complexities so easily, how the brain handles language, how languages are born and die. These questions lead us to interesting discoveries about the human mind.

Lectures three hours a week.

LING 2005 [0.5 credit]**Linguistic Analysis**

Phonological, morphological and syntactic analysis of linguistic data. Coursework consists primarily of practical exercises in data analysis.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001.

Lecture and tutorial three hours a week.

LING 2007 [0.5 credit]**Phonetics**

Description of speech sounds; transcription systems; articulation; acoustics of speech sounds; perception of speech sounds; cross-linguistic diversity and phonetic universals; the role of phonetics in grammar.

Includes: Experiential Learning Activity

Precludes additional credit for LING 2001 (no longer offered).

Prerequisite(s): LING 1001.

Lecture and tutorial three hours a week.

LING 2504 [0.5 credit]**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers.

Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity.

Also listed as PHIL 2504, COMS 2504.

Prerequisite(s): second-year standing.

Lectures three hours a week.

LING 2604 [0.5 credit]**Communication Differences and Disabilities I**

A survey course highlighting a variety of communication differences and disabilities. Specific topics vary from year to year but typically will include speech, language, fluency and hearing differences and disabilities.

Also listed as ALDS 2604.

Prerequisite(s): second year standing or permission of the instructor.

Lectures three hours a week.

LING 2802 [0.5 credit]**History of the English Language**

A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions.

Also listed as ENGL 2105.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

LING 3004 [0.5 credit]**Syntax I**

Introduction to syntactic theory. Representation and analysis of sentence structure, syntactic relations and syntactic dependencies. Testing of grammatical hypotheses.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005.

Lecture and tutorial three hours a week.

LING 3005 [0.5 credit]**Morphology I**

Introduction to word structure and morphological theory.

Topics include inflectional and derivational morphology, morphological processes, and interaction of morphology with phonology and syntax.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005 and LING 2007.

Lectures three hours a week.

LING 3007 [0.5 credit]**Phonology I**

The sound-systems of languages, analysis of phonological structure; generative phonology; phonological rules and derivations; cross-linguistic diversity and universals; segmental phonology; stress; tone.

Includes: Experiential Learning Activity

Precludes additional credit for LING 3002 (no longer offered).

Prerequisite(s): LING 2001 (no longer offered) or LING 2007.

Lecture and tutorial three hours a week.

LING 3009 [0.5 credit]**Special Topic in Linguistics**

Selected topics in general linguistics not ordinarily treated in the regular course program. Contents of the course vary from year to year.

Lectures and discussion three hours per week.

LING 3504 [0.5 credit]**Pragmatics**

The study of language in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. May include cross-cultural pragmatics.

Also listed as PHIL 3504.

Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/COMS 2504/LING 2504 or PHIL 3506, or LING 3505 or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Lectures three hours a week.

LING 3505 [0.5 credit]**Semantics**

Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.

Also listed as PHIL 3506.

Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504/COMS 2504 or PHIL 3504/LING 3504, or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Lectures three hours a week.

LING 3601 [0.5 credit]**Language Processing and the Brain**

Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.

Includes: Experiential Learning Activity

Also listed as PSYC 3709.

Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.

Lectures three hours a week.

LING 3603 [0.5 credit]**Child Language**

Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.

Includes: Experiential Learning Activity

Also listed as PSYC 3508.

Prerequisite(s): LING 1001 and second-year standing, or permission of the instructor.

Lectures three hours a week.

LING 3604 [0.5 credit]**Communication Differences and Disabilities II**

An in-depth examination of select topics in the field of communication differences and disabilities. An emphasis is placed on theoretical accounts of specific differences and disabilities and the cross-linguistic evidence for these accounts. Specific topics may vary from year to year.

Also listed as ALDS 3604.

Prerequisite(s): LING 1001 and one of ALDS or LING 2604.

Lectures three hours a week.

LING 3701 [0.5 credit]**Corpus Linguistics**

Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.

Includes: Experiential Learning Activity

Also listed as ALDS 3701.

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

LING 3702 [0.5 credit]**Sociolinguistics**

The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.

Also listed as ALDS 3202.

Precludes additional credit for ALDS 2701 (no longer offered).

Prerequisite(s): ALDS 1001 and third-year standing.

Lecture three hours a week.

LING 3801 [0.5 credit]**Structure of a Specific Language**

Description and analysis of the structure of a specific language applying phonology, morphology, syntax, and semantics. Language to be studied will be announced in advance by the School.

Prerequisite(s): LING 2001 (no longer offered) or LING 2005 or LING 2007.

Lectures three hours a week.

LING 3810 [0.5 credit]**Historical Linguistics I**

Language change; sound change; analogy; the comparative method; internal reconstruction; the philological method; historical linguistics and pre-history; language change and theories of grammar.

Precludes additional credit for LING 3101.

Prerequisite(s): LING 2007.

Lectures three hours a week.

LING 3811 [0.5 credit]**Language Typology and Universals**

Cross-linguistic survey of syntactic and morphological patterns found in the languages of the world. Typological classification and identification of language universals.

Includes: Experiential Learning Activity

Precludes additional credit for LING 3001.

Prerequisite(s): LING 2005.

Lectures three hours a week.

LING 3900 [1.0 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

LING 3901 [0.5 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

LING 4004 [0.5 credit]**Syntax II**

Advanced topics in syntax.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4002 (no longer offered).

Prerequisite(s): LING 3004 and third-year standing.

Seminars three hours a week.

LING 4005 [0.5 credit]**Morphology II**

Advanced topics in morphology.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3005 and third-year standing.

Seminars three hours a week.

LING 4007 [0.5 credit]**Phonology II**

Advanced topics in phonology.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4001 (no longer offered).

Prerequisite(s): LING 3007, and third-year standing.

Seminars three hours a week.

LING 4009 [0.5 credit]**Special Topic in Linguistics**

Examination of a topic or more specialized area in linguistics or language study. Topic to be announced.

Repeatable for credit when the topic changes.

Prerequisite(s): third- or fourth-year standing in Linguistics or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5009, for which additional credit is precluded.

Seminars three hours a week.

LING 4412 [0.5 credit]**Diversité du français**

Études des variétés du français, dans ses dimensions spatiales. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4412.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.

Seminars three hours a week.

LING 4413 [0.5 credit]**Diachronie du français**

Étude du français, dans ses dimensions historiques.

Le contenu précis de ce cours varie selon les années.

Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4413.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.

Seminars three hours a week.

LING 4414 [0.5 credit]**Analyse du français**

Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails.

Course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4414.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.

Seminars three hours a week.

LING 4415 [0.5 credit]**Variation du français**

Étude des variations internes de la langue, dans des dimensions orales/écrites. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Course is taught in French, but students submit assignments in English.

Also listed as FREN 4415.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded.

Seminars three hours a week.

LING 4505 [0.5 credit]**Formal Semantics**

Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics, quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.

Includes: Experiential Learning Activity

Also listed as PHIL 4505.

Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing, or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Seminars three hours a week.

LING 4510 [0.5 credit]**Lexical Semantics**

Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.

Includes: Experiential Learning Activity

Also listed as PHIL 4055.

Precludes additional credit for LING 4055 (no longer offered).

Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing.

Also offered at the graduate level, with different requirements, as LING 5510, for which additional credit is precluded.

Seminar three hours a week.

LING 4601 [0.5 credit]**Cognitive Neuroscience of Language**

Further study of psychological and neurolinguistic mechanisms of adult language processing. May include topics from first language acquisition.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3601 or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5601, for which additional credit is precluded.

Seminars three hours a week.

LING 4603 [0.5 credit]**First Language Acquisition**

Advanced topics in language acquisition and development and the relative contributions of the environment, cognitive development, and inborn knowledge.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001 and LING 3603.

Also offered at the graduate level, with different requirements, as LING 5603, for which additional credit is precluded.

Seminars three hours a week.

LING 4604 [0.5 credit]**Practicum in Speech Language Pathology**

Through seven-hour-a-week field placements, students pursue personal learning objectives concerning the clinical application of the psycholinguistics of communication disorders and cognitive development. A term paper integrates experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the student's program of study.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3604, fourth-year Honours standing in B.A. or B.Sc. in Linguistics with a Concentration in Psycholinguistics and Communication Disorders with a CGPA of 10.0 in the major, and permission from the School of Linguistics and Language Studies.

Field placement one day a week.

LING 4605 [0.5 credit]**Psycholinguistic Research Methods**

Experimental methodologies used in current psycholinguistic studies. Topics include experimental design and techniques, descriptive statistics, and interpreting and reporting research findings.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4009 Section

"A" (2015-16 and 2016-17) and LING 4009 Section

"B" (2013-14) and LING 4009 Section "C" (2017-18).

Prerequisite(s): third- or fourth-year Honours standing in Linguistics or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5605, for which additional credit is precluded.

Seminar three hours a week.

LING 4606 [0.5 credit]**Statistics for Language Research**

Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.

Includes: Experiential Learning Activity

Also listed as ALDS 4606.

Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.

Prerequisite(s): Third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5606 and ALDS 5604, for which additional credit is precluded.

Seminar three hours a week.

LING 4801 [0.5 credit]**Linguistic Field Methods**

With a language consultant, students discover the phonological, morphological, and syntactic structures of the target language using linguistic elicitation. Language will vary from year to year, but will normally be a non-European language. Language documentation, data management, ethical issues surrounding research in Indigenous communities.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005 and LING 2007.

Also offered at the graduate level, with different requirements, as ALDS 5801, for which additional credit is precluded.

Lectures three hours a week.

LING 4802 [0.5 credit]**Historical Linguistics: English**

A theory-intensive course that will study the development of English starting with Proto-Indo-European progressing through Common Germanic to the stages of English itself. Topics include phonological sound changes, phonemic inventories, and morphological and syntactic typology. Precludes additional credit for LING 4101.

Prerequisite(s): LING 2005 and LING 2007, and one of LING 3005, LING 3810 or LING 3811.

Also offered at the graduate level, with different requirements, as LING 5802, ENGL 5101., for which additional credit is precluded.

Seminars three hours a week.

LING 4805 [0.5 credit]**Old English**

Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.

Also listed as ENGL 4105.

Precludes additional credit for ENGL 3102 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

LING 4900 [1.0 credit]**Independent Study in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.

LING 4901 [0.5 credit]**Independent Study in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.

LING 4905 [1.0 credit]**Honours Project in Experimental Linguistics**

Students choose existing study in linguistic literature, replicate the study, present findings, compare to original study. Practical experience gathering and preparing materials, running experiments, analyzing data, interpreting findings; real, important contributions to the field of linguistics via replication studies (as mandated by the scientific method).

Includes: Experiential Learning Activity

Precludes additional credit for LING 4910.

Prerequisite(s): fourth-year Honours standing in Linguistics, with a Major CGPA of 9.0, and permission of the instructor.

Unscheduled.

LING 4910 [1.0 credit]**Honours Thesis in Linguistics**

Open to all candidates for the B.A. (Honours) in Linguistics. A thesis project selected in consultation with the School and carried out under the direction of a faculty supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4905.

Prerequisite(s): fourth-year Honours standing in Linguistics with a CGPA of 10.0 in the major; one of LING 3004, LING 3007, LING 3505, or LING 3601; and permission of the instructor.

Linguistics (Bachelor of Science)

This section presents the requirements for programs in:

- B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science)
- B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Neuroscience)
- B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Psychology)
- B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science)
- B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Neuroscience)
- B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Psychology)

B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Computer Science) (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit in:		1.0
ALDS 1001 [0.5]	Language Matters: Introduction to ALDS	
LING 1001 [0.5]	Introduction to Linguistics I	
2. 1.0 credit in:		1.0
LING 2005 [0.5]	Linguistic Analysis	
LING 2007 [0.5]	Phonetics	
3. 1.0 credit in:		1.0
LING 3004 [0.5]	Syntax I	
LING 3007 [0.5]	Phonology I	
4. 1.0 credit in LING at the 4000-level		1.0
5. 1.5 credits in LING, excluding LING 1100		1.5
6. 3.5 credits from the Concentration		3.5
a. 1.0 credit in:		
LING 3005 [0.5]	Morphology I	
LING 3505 [0.5]	Semantics	
b. 1.0 credit from:		
LING 4004 [0.5]	Syntax II	
LING 4005 [0.5]	Morphology II	
LING 4007 [0.5]	Phonology II	
LING 4505 [0.5]	Formal Semantics	
LING 4510 [0.5]	Lexical Semantics	

c. 1.5 credits in LING, excluding LING 1100	
B. Credits Not Included in the Major CGPA (11.0 credits)	
7. 4.0 credits in Computer Science Requirements	4.0
a. 1.5 credits in:	
COMP 1005 [0.5] Introduction to Computer Science I	
COMP 1006 [0.5] Introduction to Computer Science II	
COMP 1805 [0.5] Discrete Structures I	
b. 1.5 credits in:	
COMP 2401 [0.5] Introduction to Systems Programming	
COMP 2402 [0.5] Abstract Data Types and Algorithms	
COMP 2404 [0.5] Introduction to Software Engineering	
c. 1.0 credit from:	
COMP 2406 [0.5] Fundamentals of Web Applications	
COMP 2804 [0.5] Discrete Structures II	
COMP 3000 [0.5] Operating Systems	
COMP 3002 [0.5] Compiler Construction	
COMP 3004 [0.5] Object-Oriented Software Engineering	
COMP 3005 [0.5] Database Management Systems	
COMP 3007 [0.5] Programming Paradigms	
COMP 3008 [0.5] Human-Computer Interaction	
8. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
9. 6.0 credits in free electives	6.0
C. Additional Requirements	
10. School Language Proficiency Requirement must be satisfied	
11. Bachelor of Science Experimental Science Requirement must be satisfied	
Total Credits	20.0

B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Neuroscience) (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)	
1. 1.0 credit in:	1.0
ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
LING 1001 [0.5] Introduction to Linguistics I	
2. 1.0 credit in:	1.0
LING 2005 [0.5] Linguistic Analysis	
LING 2007 [0.5] Phonetics	
3. 1.0 credit in:	1.0
LING 3004 [0.5] Syntax I	
LING 3007 [0.5] Phonology I	
4. 1.0 credit in LING at the 4000 level	1.0
5. 1.5 credits in LING, excluding LING 1100	1.5
6. 3.5 credits from the Concentration:	3.5
a. 1.0 credit in:	
LING 3005 [0.5] Morphology I	
LING 3505 [0.5] Semantics	
b. 1.0 credit from:	
LING 4004 [0.5] Syntax II	

LING 4005 [0.5] Morphology II	
LING 4007 [0.5] Phonology II	
LING 4505 [0.5] Formal Semantics	
LING 4510 [0.5] Lexical Semantics	
c. 1.5 credits in LING, excluding LING 1100	
B. Credits Not Included in the Major CGPA (11.0 credits)	
7. 3.5 credits in Neuroscience	3.5
a. 2.0 credits in:	
NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease	
NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease	
NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience	
NEUR 2002 [0.5] Introduction to Statistics in Neuroscience	
b. 1.5 credits from:	
NEUR 2201 [0.5] Cellular and Molecular Neuroscience	
NEUR 2202 [0.5] Neurodevelopment and Plasticity	
NEUR 3206 [0.5] Sensory and Motor Neuroscience	
NEUR 3207 [0.5] Systems Neuroscience	
NEUR 3303 [0.5] The Neuroscience of Consciousness	
8. 1.5 credits in:	1.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 3306 [0.5] Human Anatomy and Physiology	
9. 1.0 credit from:	1.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II	
10. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
11. 4.0 credits in free electives	4.0
C. Additional Requirements	
12. School Language Proficiency Requirement must be satisfied	
Total Credits	20.0

B.Sc. Honours in Linguistics with a Concentration in Linguistic Theory (Psychology) (20.0 credits)

A. Credits included in the Major CGPA (9.0 credits)	
1. 1.0 credit in:	1.0
ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
LING 1001 [0.5] Introduction to Linguistics I	
2. 1.0 credit in:	1.0
LING 2005 [0.5] Linguistic Analysis	
LING 2007 [0.5] Phonetics	
3. 1.0 credit in:	1.0
LING 3004 [0.5] Syntax I	
LING 3007 [0.5] Phonology I	
4. 1.0 credit in LING at the 4000 level	1.0
5. 1.5 credits in LING, excluding LING 1100	1.5

6. 3.5 credits from the Concentration:	3.5
a. 1.0 credit in:	
LING 3005 [0.5] Morphology I	
LING 3505 [0.5] Semantics	
b. 1.0 credit from:	
LING 4004 [0.5] Syntax II	
LING 4005 [0.5] Morphology II	
LING 4007 [0.5] Phonology II	
LING 4505 [0.5] Formal Semantics	
LING 4510 [0.5] Lexical Semantics	
c. 1.5 credits in LING (excluding LING 1100)	
B. Credits Not Included in the Major CGPA (11.0 credits)	
7. 3.5 credits in Psychology:	3.5
a. 2.0 credits in:	
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	
PSYC 2001 [0.5] Introduction to Research Methods in Psychology	
PSYC 2002 [0.5] Introduction to Statistics in Psychology	
b. 1.5 credits from:	
PSYC 2307 [0.5] Human Neuropsychology I	
PSYC 2700 [0.5] Introduction to Cognitive Psychology	
PSYC 3307 [0.5] Human Neuropsychology II	
PSYC 3506 [0.5] Cognitive Development	
PSYC 3702 [0.5] Perception	
8. 1.5 credits in:	1.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 3306 [0.5] Human Anatomy and Physiology	
9. 1.0 credit from:	1.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II	
10. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
11. 4.0 credits in free electives	4.0
C. Additional Requirements	
12. School Language Proficiency Requirement must be satisfied	
Total Credits	20.0

B.Sc. Honours in Linguistics with a Concentration in Psycholinguistics and Communication Disorders (Computer Science) (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)	
1. 1.0 credit in:	1.0
ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
LING 1001 [0.5] Introduction to Linguistics I	
2. 1.0 credit in:	1.0
LING 2005 [0.5] Linguistic Analysis	
LING 2007 [0.5] Phonetics	

3. 1.0 credit in:	1.0
LING 3004 [0.5] Syntax I	
LING 3007 [0.5] Phonology I	
4. 1.0 credit in LING at the 4000-level	1.0
5. 1.5 credits in LING, excluding LING 1100	1.5
6. 3.5 credits from the Concentration	3.5
a. 0.5 credit in:	
LING 1002 [0.5] Introduction to Linguistics II	
b. 2.0 credits in:	
LING 2604 [0.5] Communication Differences and Disabilities I	
LING 3601 [0.5] Language Processing and the Brain	
LING 3603 [0.5] Child Language	
LING 3604 [0.5] Communication Differences and Disabilities II	
c. 1.0 credit from:	
LING 4601 [0.5] Cognitive Neuroscience of Language	
LING 4603 [0.5] First Language Acquisition	
LING 4605 [0.5] Psycholinguistic Research Methods	
LING 4606 [0.5] Statistics for Language Research	
B. Credits Not Included in the Major CGPA (11.0 credits)	
7. 4.0 credits in Computer Science Requirements	4.0
a. 1.5 credits in:	
COMP 1005 [0.5] Introduction to Computer Science I	
COMP 1006 [0.5] Introduction to Computer Science II	
COMP 1805 [0.5] Discrete Structures I	
b. 1.5 credits in:	
COMP 2401 [0.5] Introduction to Systems Programming	
COMP 2402 [0.5] Abstract Data Types and Algorithms	
COMP 2404 [0.5] Introduction to Software Engineering	
c. 1.0 credit from:	
COMP 2406 [0.5] Fundamentals of Web Applications	
COMP 2804 [0.5] Discrete Structures II	
COMP 3000 [0.5] Operating Systems	
COMP 3002 [0.5] Compiler Construction	
COMP 3004 [0.5] Object-Oriented Software Engineering	
COMP 3005 [0.5] Database Management Systems	
COMP 3007 [0.5] Programming Paradigms	
COMP 3008 [0.5] Human-Computer Interaction	
8. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
9. 6.0 credits in free electives	6.0
C. Additional Requirements	
10. School Language Proficiency Requirement must be satisfied	
11. Bachelor of Science Experimental Science Requirement must be satisfied	
Total Credits	20.0

**B.Sc. Honours in Linguistics
with a Concentration in Psycholinguistics and
Communication Disorders (Neuroscience) (20.0
credits)**

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit in:	1.0
ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
LING 1001 [0.5] Introduction to Linguistics I	
2. 1.0 credit in:	1.0
LING 2005 [0.5] Linguistic Analysis	
LING 2007 [0.5] Phonetics	
3. 1.0 credit in:	1.0
LING 3004 [0.5] Syntax I	
LING 3007 [0.5] Phonology I	
4. 1.0 credit in LING at the 4000 level	1.0
5. 1.5 credits in LING, excluding LING 1100	1.5
6. 3.5 credits from the Concentration:	
a. 0.5 credit in:	0.5
LING 1002 [0.5] Introduction to Linguistics II	
b. 2.0 credits in:	2.0
LING 2604 [0.5] Communication Differences and Disabilities I	
LING 3601 [0.5] Language Processing and the Brain	
LING 3603 [0.5] Child Language	
LING 3604 [0.5] Communication Differences and Disabilities II	
c. 1.0 credit from:	1.0
LING 4601 [0.5] Cognitive Neuroscience of Language	
LING 4603 [0.5] First Language Acquisition	
LING 4605 [0.5] Psycholinguistic Research Methods	
LING 4606 [0.5] Statistics for Language Research	
B. Credits Not Included in the Major CGPA (11.0 credits)	
7. 3.5 credits in Neuroscience:	3.5
a. 2.0 credits in:	
NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease	
NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease	
NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience	
NEUR 2002 [0.5] Introduction to Statistics in Neuroscience	
b. 1.5 credits from:	
NEUR 2201 [0.5] Cellular and Molecular Neuroscience	
NEUR 2202 [0.5] Neurodevelopment and Plasticity	
NEUR 3206 [0.5] Sensory and Motor Neuroscience	
NEUR 3207 [0.5] Systems Neuroscience	
NEUR 3303 [0.5] The Neuroscience of Consciousness	
8. 1.5 credits in:	1.5
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 3306 [0.5] Human Anatomy and Physiology	

9. 1.0 credit from:	1.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II	

10. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	

11. 4.0 credits in free electives	4.0
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C. Additional Requirements

12. School Language Proficiency Requirement must be satisfied

Total Credits	20.0
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**B.Sc. Honours in Linguistics
with a Concentration in Psycholinguistics and
Communication Disorders (Psychology) (20.0
credits)**

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit in:	1.0
ALDS 1001 [0.5] Language Matters: Introduction to ALDS	
LING 1001 [0.5] Introduction to Linguistics I	
2. 1.0 credit in:	1.0
LING 2005 [0.5] Linguistic Analysis	
LING 2007 [0.5] Phonetics	
3. 1.0 credit in:	1.0
LING 3004 [0.5] Syntax I	
LING 3007 [0.5] Phonology I	
4. 1.0 credit in LING at the 4000 level	1.0
5. 1.5 credits in LING, excluding LING 1100	1.5
6. 3.5 credits from the Concentration	
a. 0.5 credit in:	0.5
LING 1002 [0.5] Introduction to Linguistics II	
b. 2.0 credits in:	2.0
LING 2604 [0.5] Communication Differences and Disabilities I	
LING 3601 [0.5] Language Processing and the Brain	
LING 3603 [0.5] Child Language	
LING 3604 [0.5] Communication Differences and Disabilities II	
c. 1.0 credit from:	1.0
LING 4601 [0.5] Cognitive Neuroscience of Language	
LING 4603 [0.5] First Language Acquisition	
LING 4605 [0.5] Psycholinguistic Research Methods	
LING 4606 [0.5] Statistics for Language Research	
B. Credits Not Included in the Major CGPA (11.0 credits)	
7. 3.5 credits in Psychology:	3.5
a. 2.0 credits in:	
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	
PSYC 2001 [0.5] Introduction to Research Methods in Psychology	
PSYC 2002 [0.5] Introduction to Statistics in Psychology	
b. 1.5 credits from:	

PSYC 2307 [0.5]	Human Neuropsychology I	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	
PSYC 3307 [0.5]	Human Neuropsychology II	
PSYC 3506 [0.5]	Cognitive Development	
PSYC 3702 [0.5]	Perception	
8. 1.5 credits in:		1.5
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 3306 [0.5]	Human Anatomy and Physiology	
9. 1.0 credit from:		1.0
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
10. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
11. 4.0 credits in free electives		4.0
C. Additional Requirements		
12. School Language Proficiency Requirement must be satisfied		
Total Credits		20.0

School Language Proficiency Requirement

Students in B.A. Honours, Combined Honours, or 15 credit programs of the School of Linguistics and Language Studies are required, at graduation, to have a working knowledge of a language other than English. Proficiency is determined by successful completion of a 1.0 credit university course in the language or by an oral or written test given by the School.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
- 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II

BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except EARTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use EARTH 2401, EARTH 2402, and EARTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places

available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology,

Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Linguistics (LING) Courses

LING 1001 [0.5 credit]

Introduction to Linguistics I

Nature of language and linguistic knowledge. Formal description and analysis of language: phonetics, phonology, morphology, syntax and semantics. Lecture and tutorial three hours a week.

LING 1002 [0.5 credit]

Introduction to Linguistics II

Survey of topics in linguistics: language change, sociolinguistics, language acquisition and processing. May include language typology, language contact and writing systems. Prerequisite(s): LING 1001 (may be taken concurrently). Lectures three hours a week.

LING 1100 [0.5 credit]

The Mysteries of Language

This course explores some intriguing mysteries of language - whether it is unique to humans, how children master its complexities so easily, how the brain handles language, how languages are born and die. These questions lead us to interesting discoveries about the human mind. Lectures three hours a week.

LING 2005 [0.5 credit]**Linguistic Analysis**

Phonological, morphological and syntactic analysis of linguistic data. Coursework consists primarily of practical exercises in data analysis.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001.

Lecture and tutorial three hours a week.

LING 2007 [0.5 credit]**Phonetics**

Description of speech sounds; transcription systems; articulation; acoustics of speech sounds; perception of speech sounds; cross-linguistic diversity and phonetic universals; the role of phonetics in grammar.

Includes: Experiential Learning Activity

Precludes additional credit for LING 2001 (no longer offered).

Prerequisite(s): LING 1001.

Lecture and tutorial three hours a week.

LING 2504 [0.5 credit]**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers.

Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity.

Also listed as PHIL 2504, COMS 2504.

Prerequisite(s): second-year standing.

Lectures three hours a week.

LING 2604 [0.5 credit]**Communication Differences and Disabilities I**

A survey course highlighting a variety of communication differences and disabilities. Specific topics vary from year to year but typically will include speech, language, fluency and hearing differences and disabilities.

Also listed as ALDS 2604.

Prerequisite(s): second year standing or permission of the instructor.

Lectures three hours a week.

LING 2802 [0.5 credit]**History of the English Language**

A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions.

Also listed as ENGL 2105.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

LING 3004 [0.5 credit]**Syntax I**

Introduction to syntactic theory. Representation and analysis of sentence structure, syntactic relations and syntactic dependencies. Testing of grammatical hypotheses.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005.

Lecture and tutorial three hours a week.

LING 3005 [0.5 credit]**Morphology I**

Introduction to word structure and morphological theory.

Topics include inflectional and derivational morphology, morphological processes, and interaction of morphology with phonology and syntax.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005 and LING 2007.

Lectures three hours a week.

LING 3007 [0.5 credit]**Phonology I**

The sound-systems of languages, analysis of phonological structure; generative phonology; phonological rules and derivations; cross-linguistic diversity and universals; segmental phonology; stress; tone.

Includes: Experiential Learning Activity

Precludes additional credit for LING 3002 (no longer offered).

Prerequisite(s): LING 2001 (no longer offered) or LING 2007.

Lecture and tutorial three hours a week.

LING 3009 [0.5 credit]**Special Topic in Linguistics**

Selected topics in general linguistics not ordinarily treated in the regular course program. Contents of the course vary from year to year.

Lectures and discussion three hours per week.

LING 3504 [0.5 credit]**Pragmatics**

The study of language in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. May include cross-cultural pragmatics.

Also listed as PHIL 3504.

Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/COMS 2504/LING 2504 or PHIL 3506, or LING 3505 or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Lectures three hours a week.

LING 3505 [0.5 credit]**Semantics**

Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.

Also listed as PHIL 3506.

Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504/COMS 2504 or PHIL 3504/LING 3504, or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Lectures three hours a week.

LING 3601 [0.5 credit]**Language Processing and the Brain**

Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.

Includes: Experiential Learning Activity

Also listed as PSYC 3709.

Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.

Lectures three hours a week.

LING 3603 [0.5 credit]**Child Language**

Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.

Includes: Experiential Learning Activity

Also listed as PSYC 3508.

Prerequisite(s): LING 1001 and second-year standing, or permission of the instructor.

Lectures three hours a week.

LING 3604 [0.5 credit]**Communication Differences and Disabilities II**

An in-depth examination of select topics in the field of communication differences and disabilities. An emphasis is placed on theoretical accounts of specific differences and disabilities and the cross-linguistic evidence for these accounts. Specific topics may vary from year to year.

Also listed as ALDS 3604.

Prerequisite(s): LING 1001 and one of ALDS or LING 2604.

Lectures three hours a week.

LING 3701 [0.5 credit]**Corpus Linguistics**

Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.

Includes: Experiential Learning Activity

Also listed as ALDS 3701.

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

LING 3702 [0.5 credit]**Sociolinguistics**

The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.

Also listed as ALDS 3202.

Precludes additional credit for ALDS 2701 (no longer offered).

Prerequisite(s): ALDS 1001 and third-year standing.

Lecture three hours a week.

LING 3801 [0.5 credit]**Structure of a Specific Language**

Description and analysis of the structure of a specific language applying phonology, morphology, syntax, and semantics. Language to be studied will be announced in advance by the School.

Prerequisite(s): LING 2001 (no longer offered) or LING 2005 or LING 2007.

Lectures three hours a week.

LING 3810 [0.5 credit]**Historical Linguistics I**

Language change; sound change; analogy; the comparative method; internal reconstruction; the philological method; historical linguistics and pre-history; language change and theories of grammar.

Precludes additional credit for LING 3101.

Prerequisite(s): LING 2007.

Lectures three hours a week.

LING 3811 [0.5 credit]**Language Typology and Universals**

Cross-linguistic survey of syntactic and morphological patterns found in the languages of the world. Typological classification and identification of language universals.

Includes: Experiential Learning Activity

Precludes additional credit for LING 3001.

Prerequisite(s): LING 2005.

Lectures three hours a week.

LING 3900 [1.0 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

LING 3901 [0.5 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

LING 4004 [0.5 credit]**Syntax II**

Advanced topics in syntax.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4002 (no longer offered).

Prerequisite(s): LING 3004 and third-year standing.

Seminars three hours a week.

LING 4005 [0.5 credit]**Morphology II**

Advanced topics in morphology.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3005 and third-year standing.

Seminars three hours a week.

LING 4007 [0.5 credit]**Phonology II**

Advanced topics in phonology.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4001 (no longer offered).

Prerequisite(s): LING 3007, and third-year standing.

Seminars three hours a week.

LING 4009 [0.5 credit]**Special Topic in Linguistics**

Examination of a topic or more specialized area in linguistics or language study. Topic to be announced.

Repeatable for credit when the topic changes.

Prerequisite(s): third- or fourth-year standing in Linguistics or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5009, for which additional credit is precluded.

Seminars three hours a week.

LING 4412 [0.5 credit]**Diversité du français**

Études des variétés du français, dans ses dimensions spatiales. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4412.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.

Seminars three hours a week.

LING 4413 [0.5 credit]**Diachronie du français**

Étude du français, dans ses dimensions historiques.

Le contenu précis de ce cours varie selon les années.

Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4413.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.

Seminars three hours a week.

LING 4414 [0.5 credit]**Analyse du français**

Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails.

Course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4414.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.

Seminars three hours a week.

LING 4415 [0.5 credit]**Variation du français**

Étude des variations internes de la langue, dans des dimensions orales/écrites. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Course is taught in French, but students submit assignments in English.

Also listed as FREN 4415.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded.

Seminars three hours a week.

LING 4505 [0.5 credit]**Formal Semantics**

Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics, quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.

Includes: Experiential Learning Activity

Also listed as PHIL 4505.

Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing, or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Seminars three hours a week.

LING 4510 [0.5 credit]**Lexical Semantics**

Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.

Includes: Experiential Learning Activity

Also listed as PHIL 4055.

Precludes additional credit for LING 4055 (no longer offered).

Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing.

Also offered at the graduate level, with different requirements, as LING 5510, for which additional credit is precluded.

Seminar three hours a week.

LING 4601 [0.5 credit]**Cognitive Neuroscience of Language**

Further study of psychological and neurolinguistic mechanisms of adult language processing. May include topics from first language acquisition.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3601 or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5601, for which additional credit is precluded.

Seminars three hours a week.

LING 4603 [0.5 credit]**First Language Acquisition**

Advanced topics in language acquisition and development and the relative contributions of the environment, cognitive development, and inborn knowledge.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001 and LING 3603.

Also offered at the graduate level, with different requirements, as LING 5603, for which additional credit is precluded.

Seminars three hours a week.

LING 4604 [0.5 credit]**Practicum in Speech Language Pathology**

Through seven-hour-a-week field placements, students pursue personal learning objectives concerning the clinical application of the psycholinguistics of communication disorders and cognitive development. A term paper integrates experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the student's program of study.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3604, fourth-year Honours standing in B.A. or B.Sc. in Linguistics with a Concentration in Psycholinguistics and Communication Disorders with a CGPA of 10.0 in the major, and permission from the School of Linguistics and Language Studies.

Field placement one day a week.

LING 4605 [0.5 credit]**Psycholinguistic Research Methods**

Experimental methodologies used in current psycholinguistic studies. Topics include experimental design and techniques, descriptive statistics, and interpreting and reporting research findings.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4009 Section "A" (2015-16 and 2016-17) and LING 4009 Section "B" (2013-14) and LING 4009 Section "C" (2017-18).

Prerequisite(s): third- or fourth-year Honours standing in Linguistics or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5605, for which additional credit is precluded.

Seminar three hours a week.

LING 4606 [0.5 credit]**Statistics for Language Research**

Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.

Includes: Experiential Learning Activity

Also listed as ALDS 4606.

Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.

Prerequisite(s): Third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5606 and ALDS 5604, for which additional credit is precluded.

Seminar three hours a week.

LING 4801 [0.5 credit]**Linguistic Field Methods**

With a language consultant, students discover the phonological, morphological, and syntactic structures of the target language using linguistic elicitation. Language will vary from year to year, but will normally be a non-European language. Language documentation, data management, ethical issues surrounding research in Indigenous communities.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005 and LING 2007.

Also offered at the graduate level, with different requirements, as ALDS 5801, for which additional credit is precluded.

Lectures three hours a week.

LING 4802 [0.5 credit]**Historical Linguistics: English**

A theory-intensive course that will study the development of English starting with Proto-Indo-European progressing through Common Germanic to the stages of English itself. Topics include phonological sound changes, phonemic inventories, and morphological and syntactic typology. Precludes additional credit for LING 4101.

Prerequisite(s): LING 2005 and LING 2007, and one of LING 3005, LING 3810 or LING 3811.

Also offered at the graduate level, with different requirements, as LING 5802, ENGL 5101., for which additional credit is precluded.

Seminars three hours a week.

LING 4805 [0.5 credit]**Old English**

Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.

Also listed as ENGL 4105.

Precludes additional credit for ENGL 3102 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

LING 4900 [1.0 credit]**Independent Study in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.

LING 4901 [0.5 credit]**Independent Study in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.

LING 4905 [1.0 credit]**Honours Project in Experimental Linguistics**

Students choose existing study in linguistic literature, replicate the study, present findings, compare to original study. Practical experience gathering and preparing materials, running experiments, analyzing data, interpreting findings; real, important contributions to the field of linguistics via replication studies (as mandated by the scientific method).

Includes: Experiential Learning Activity

Precludes additional credit for LING 4910.

Prerequisite(s): fourth-year Honours standing in Linguistics, with a Major CGPA of 9.0, and permission of the instructor.

Unscheduled.

LING 4910 [1.0 credit]**Honours Thesis in Linguistics**

Open to all candidates for the B.A. (Honours) in Linguistics. A thesis project selected in consultation with the School and carried out under the direction of a faculty supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4905.

Prerequisite(s): fourth-year Honours standing in Linguistics with a CGPA of 10.0 in the major; one of LING 3004, LING 3007, LING 3505, or LING 3601; and permission of the instructor.

Mandarin Chinese (Minor)

This section presents the requirements for programs in:

- Minor in Mandarin Chinese

Minor in Mandarin Chinese (4.0 credits)

Open to all undergraduate degree students.

Requirements:

- | | |
|---|-----|
| 1. 3.0 credits in CHIN | 3.0 |
| 2. 1.0 credit in CHIN at the 3000-level or higher | 1.0 |
| 3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language. | |
| 4. The remaining requirements of the major discipline(s) and degree must be satisfied. | |

Total Credits **4.0**

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Chinese (CHIN) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details,

please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

CHIN 1010 [0.5 credit]

First-Year Mandarin Chinese I

For students with no knowledge of Mandarin. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language.

Compulsory attendance.

Precludes additional credit for CHIN 1110.

Four hours a week.

CHIN 1020 [0.5 credit]

First-Year Mandarin Chinese II

Continuation of first-year Mandarin Chinese. Oral skills; basic reading and writing skills. Compulsory attendance. Precludes additional credit for CHIN 1110.

Prerequisite(s): grade of C or higher in CHIN 1010, or permission of the School.

Four hours a week.

CHIN 1110 [1.0 credit]

Intensive First-Year Mandarin Chinese

For students with no knowledge of Mandarin Chinese. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language. Compulsory attendance.

Precludes additional credit for CHIN 1010 and CHIN 1020.

Eight hours a week (one term).

CHIN 2010 [0.5 credit]

Second-Year Mandarin Chinese I

Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for CHIN 2110.

Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School.

Four hours a week.

CHIN 2020 [0.5 credit]

Second-Year Mandarin Chinese II

Continuation of second-year Mandarin Chinese. Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for CHIN 2110.

Prerequisite(s): grade of C or higher in CHIN 2010 or permission of the School.

Four hours a week.

CHIN 2110 [1.0 credit]

Intensive Second-Year Mandarin Chinese

Further study of Mandarin Chinese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for CHIN 2010 and CHIN 2020.

Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School.

Eight hours a week (one term).

CHIN 3010 [0.5 credit]

Third-Year Mandarin Chinese I

Continuation of the study of Mandarin Chinese to reach a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in CHIN 2020, or CHIN 2110, or permission of the School.

Three hours a week.

CHIN 3015 [0.5 credit]

Mandarin Chinese for Heritage Speakers

For students who have attained Mandarin Chinese proficiency in an informal setting, this course provides an opportunity to build on their existing language skills and to develop them in a formal academic setting. The course will formalize grammar awareness and enhance Mandarin Chinese literacy skills.

Precludes additional credit for 1000 and 2000 level CHIN courses, and also for CHIN 3010.

Prerequisite(s): permission of the School.

Three hours a week.

CHIN 3020 [0.5 credit]

Third-Year Mandarin Chinese II

Continuation of third-year Mandarin Chinese. Progress toward reaching a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in CHIN 3010 or CHIN 3015, or permission of the School.

Three hours a week.

CHIN 4010 [0.5 credit]**Fourth-Year Mandarin Chinese I**

Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 3020, or permission of the School. Three hours a week.

CHIN 4020 [0.5 credit]**Fourth-Year Mandarin Chinese II**

Continuation of fourth-year Mandarin Chinese. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance. Prerequisite(s): grade of C or higher in CHIN 4010, or permission of the School. Three hours a week.

CHIN 4210 [0.5 credit]**Functional Contemporary Mandarin Chinese I**

Further study of Mandarin Chinese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains. Prerequisite(s): grade of C or higher in CHIN 4020, or permission of the School. Three hours a week.

CHIN 4220 [0.5 credit]**Functional Contemporary Mandarin Chinese II**

Continuation of CHIN 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains. Prerequisite(s): grade of C or higher in CHIN 4210 or permission of the School. Three hours a week.

CHIN 4380 [0.5 credit]**Topics in Chinese Culture and Society**

Selected topics in Chinese culture and society. Repeatable once for credit when topic varies. Taught in English. Prerequisite(s): Third-year standing in the Minor in Mandarin Chinese, or permission of the instructor. Three hours a week.

CHIN 4900 [1.0 credit]**Independent Study**

Research in a topic in Mandarin Chinese language, literature or linguistics under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing in the Minor in Mandarin Chinese, grade of C or higher in CHIN 4020 or equivalent, and permission of the School.

CHIN 4901 [0.5 credit]**Independent Study**

Research in a topic in Mandarin Chinese language, literature or linguistics under the supervision of a member of the School. Includes: Experiential Learning Activity Prerequisite(s): third- or fourth-year standing in the Minor in Mandarin Chinese, grade of C or higher in CHIN 4020 or equivalent, and permission of the School.

Mathematics and Statistics

This section presents the requirements for programs in:

- Mathematics B. Math. Honours
- Mathematics with Concentration in Stochastics B. Math. Honours
- Computational and Applied Mathematics and Statistics with Concentration B.Math. Honours
- Concentration in Applied Analysis
- Concentration in Applied Statistics and Probability
- Concentration in Discrete Mathematics
- Statistics B. Math. Honours
- Statistics with Concentration in Actuarial Science B. Math. Honours
- Mathematics B. Math.
- Computer Mathematics B. Math.
- Statistics B. Math.
- Computer Science and Mathematics: Concentration in Computing Theory and Numerical Methods B. Math. Combined Honours
- Computer Science and Mathematics: Concentration in Statistics and Computing B. Math. Combined Honours
- Mathematics and Physics B.Sc. Double Honours
- Economics and Mathematics B.Math. Combined Honours
- Economics and Statistics B.Math. Combined Honours
- Mathematics (Combined B.Math./M.Sc.) B.Math.
- Statistics (Combined B.Math./M.Sc.) B.Math.
- Minor in Mathematics
- Minor in Statistics

Program Requirements**Course Prerequisites**

The following courses central to B.Math. programs have grade requirements in their prerequisites:

- MATH 2000 requires C+ in (MATH 1002 (no longer offered) or MATH 2052) , or B+ in (MATH 2007 or MATH 1005), and C+ in (MATH 1102 (no longer offered) or MATH 2152), or B+ in (MATH 1107 or MATH 1104).
- MATH 2100 requires C+ in (MATH 1102 (no longer offered) or MATH 2152), or B+ in MATH 2107.
- MATH 2454 requires C+ in (MATH 1002 (no longer offered) or MATH 2052 or MATH 2007 or MATH 1005), and C+ in (MATH 1102 (no longer offered) or MATH 2152 or MATH 2107).
- STAT 2655 requires C+ in (MATH 1002 (no longer offered) or MATH 2052 or MATH 2007 or MATH 1005), and C+ in (MATH 1102 (no longer offered) or MATH 2152 or MATH 1107 or MATH 1104).
- MATH 2007 requires MATH 1004 or C- in (MATH 1007 or MATH 1009).
- MATH 2107 requires MATH 1104 or C- in MATH 1107

Course Categories for B.Math. Programs

2000-level Honours Sequence

The following courses constitute the 2000-level Honours Sequence:

MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis
MATH 2100 [1.0]	Algebra
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)
STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)
MATH 2907 [0.5]	Directed Studies (Honours)

3000-level Honours Sequence

The following courses constitute the 3000-level Honours Sequence. Courses in the 3000-level Honours Sequence have grade levels in their prerequisites

MATH 3001 [0.5]	Real Analysis I (Honours)
MATH 3002 [0.5]	Real Analysis II (Honours)
MATH 3003 [0.5]	Advanced Differential Calculus (Honours)
MATH 3057 [0.5]	Functions of a Complex Variable (Honours)
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)
MATH 3106 [0.5]	Introduction to Group Theory (Honours)
MATH 3158 [0.5]	Rings and Fields (Honours)
MATH 3306 [0.5]	Elements of Set Theory (Honours)
MATH 3355 [0.5]	Number Theory and Applications (Honours)
MATH 3806 [0.5]	Numerical Analysis (Honours)
MATH 3807 [0.5]	Mathematical Software (Honours)
MATH 3855 [0.5]	Discrete Structures and Applications (Honours)
STAT 3506 [0.5]	Stochastic Processes and Applications (Honours)
STAT 3553 [0.5]	Regression Modeling (Honours)

STAT 3558 [0.5] Elements of Probability Theory (Honours)

STAT 3559 [0.5] Mathematical Statistics (Honours)

Natural Science Electives

All courses with the following subject codes:

BIOC, BIOL, CHEM, ENSC, EARTH, ISCI, NSCI, PHYS

APPROVED ARTS OR SOCIAL SCIENCES ELECTIVES

All courses offered by the Faculty of Arts and Social Sciences and the Faculty of Public Affairs are acceptable as Arts or Social Sciences Electives except for the following courses, which are only accepted for credit as free electives in any program of the School. See item 3 under Prohibited and Restricted Courses below concerning Computer Mathematics programs.

Business

BUSI 1001 [0.5]	Principles of Financial Accounting
BUSI 1002 [0.5]	Management Accounting
BUSI 1004 [0.5]	Financial Accounting for Business Students
BUSI 1005 [0.5]	Managerial Accounting for Business Students
BUSI 1402 [0.5]	Introduction to Business Information and Communication Technologies
BUSI 2001 [0.5]	Intermediate Accounting I
BUSI 2002 [0.5]	Intermediate Accounting II
BUSI 2402 [0.5]	Business Applications Development
BUSI 3001 [0.5]	Accounting for Business Combinations
BUSI 3008 [0.5]	Intermediate Management Accounting and Control

Economics

ECON 4005 [0.5] Operations Research II

Geography

GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3108 [0.5]	Soil Properties
GEOG 4000/ ENST 4400 [0.5]	Field Studies
GEOG 4005/ ENST 4005 [0.5]	Directed Studies in Geography
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103/ ENVE 3003 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Geomatics

GEOM 2007 [0.5]	Vector GIS: Points, Lines and Polygons
GEOM 3002 [0.5]	Introduction to Remote Sensing
GEOM 3005 [0.5]	Geospatial Analysis
GEOM 3007 [0.5]	Cartographic Theory and Design
GEOM 4003 [0.5]	Remote Sensing of the Environment
GEOM 4008 [0.5]	Advanced Topics in Geographic Information Systems

GEOM 4009 [0.5]	Custom Geomatics Applications
Psychology	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 4001 [0.5]	Special Topics in Psychology

Prohibited and Restricted Courses

- MATH 1805/COMP 1805 can be counted only as a half-credit free elective in Mathematics and Statistics programs.
- The following courses may not be counted for academic credit (even as free electives) in any program offered by the School of Mathematics and Statistics: BIOL 3604, COMS 3001, CRCJ 3001, ECON 1401, ECON 1402, ECON 2201 (no longer offered), ECON 2202 (no longer offered), ECON 2210, ECON 2220, ECON 2400 (no longer offered), ECON 3001, ECON 4001, ECON 4002, ECON 4004, ECON 4025, ECON 4706, ECON 4707, ECON 4713, ECON 2606, GEOG 2006, GEOG 3003, NEUR 2001, NEUR 2002, NEUR 3001, NEUR 3002, PSCI 2702, PSYC 2001, PSYC 2002, PSYC 3000 [1.0], SOCI 3000, SOCI 3002, SOCI 4009, SOWK 3001, SYSC 2510. Students who have completed ECON 2201 (no longer offered) and ECON 2202 (no longer offered) and enter a B.Math. program may be exempted from taking STAT 2507 and STAT 2509 only with permission of the School of Mathematics and Statistics, and provided the grade in ECON 2201 (no longer offered) and ECON 2202 (no longer offered) is B- or higher in each.
- BUSI 1402, BUSI 2402, and COMP 1001 may not count for credit in a B.Math or a Computer Science and Mathematics B.Math Combined Honours program, even as free electives.
- Only one of MATH 3806, COMP 3806 (no longer offered), COMP 3800 (no longer offered), or MATH 3800 may count for credit in a B.Math. program.

Mathematics

B. Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.5 credits)

1. 2.5 credits in:		2.5
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2152 [0.5]	Introductory Algebra II	
2. 3.5 credits in:		3.5
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2100 [1.0]	Algebra	
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	

STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
3. 2.0 credits in:		2.0
MATH 3001 [0.5]	Real Analysis I (Honours)	
MATH 3057 [0.5]	Functions of a Complex Variable (Honours)	
MATH 3106 [0.5]	Introduction to Group Theory (Honours)	
MATH 3158 [0.5]	Rings and Fields (Honours)	
4. 0.5 credit from:		0.5
MATH 3002 [0.5]	Real Analysis II (Honours)	
MATH 3003 [0.5]	Advanced Differential Calculus (Honours)	
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
5. 1.0 credit from		1.0
3000-level Honours Sequence		
6. 1.5 credits in MATH or STAT at the 4000-level or higher		1.5
7. 0.5 credit in:		0.5
MATH 4905 [0.5]	Honours Project (Honours)	
B. Credits Not Included in the Major CGPA (8.5 credits)		
8. 4.0 credits not in MATH, STAT or COMP, consisting of:		4.0
a. 1.0 credit in Natural Science Electives		
b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives		
9. 4.5 credits in free electives		4.5
Total Credits		20.0

Mathematics with Concentration in Stochastics

B. Math. Honours (20.0 credits)

Items 3, 4, 5 and 6 in the Mathematics degree requirements are replaced by:

3. 3.0 credits in:		3.0
MATH 3001 [0.5]	Real Analysis I (Honours)	
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
STAT 3506 [0.5]	Stochastic Processes and Applications (Honours)	
STAT 3558 [0.5]	Elements of Probability Theory (Honours)	
STAT 3559 [0.5]	Mathematical Statistics (Honours)	
STAT 4501 [0.5]	Probability Theory (Honours)	
4. 0.5 credit from:		0.5
STAT 3553 [0.5]	Regression Modeling (Honours)	
MATH 3801 [0.5]	Linear Programming	
5. 0.5 credit in STAT at the 4000-level		0.5
6. 1.0 credit in MATH or STAT at the 4000-level or higher		1.0
Total Credits		5.0

Computational and Applied Mathematics and Statistics with Concentration

B. Math. Honours (20.0 credits)

A. Credits included in the Major CGPA (14.5 credits)

1. 7.5 credits in:		7.5
COMP 1405 [0.5]	Introduction to Computer Science I	
COMP 1406 [0.5]	Introduction to Computer Science II	

COMP 2401 [0.5]	Introduction to Systems Programming	
COMP 2402 [0.5]	Abstract Data Types and Algorithms	
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
STAT 1500 [0.5]	Introduction to Statistical Computing	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2152 [0.5]	Introductory Algebra II	
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
2. 6.5 credits	in one of the concentrations described below, also included in the Major CGPA:	6.5
3. 0.5 credit	from:	0.5
MATH 4905 [0.5]	Honours Project (Honours)	
STAT 4905 [0.5]	Honours Project (Honours)	
B. Credits Not Included in the Major CGPA (5.5 credits)		
4. 1.0 credit	in Natural Science electives at the 1000 level or above	1.0
5. 3.0 credits	from Natural Science, or Approved Arts and Social Sciences electives	3.0
6. 1.5 credits	in free electives	1.5
Total Credits		20.0

Concentration in Applied Analysis (6.5 credits)

Requirements:

2a. 3.0 credits	in:	3.0
MATH 2100 [1.0]	Algebra	
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3057 [0.5]	Functions of a Complex Variable (Honours)	
MATH 3806 [0.5]	Numerical Analysis (Honours)	
MATH 3855 [0.5]	Discrete Structures and Applications (Honours)	
2b. 1.0 credit	from:	1.0
MATH 4700 [0.5]	Partial Differential Equations (Honours)	
MATH 4701 [0.5]	Topics in Differential Equations (Honours)	
MATH 4703 [0.5]	Dynamical Systems (Honours)	
MATH 4708 [0.5]	Asymptotic Methods of Applied Mathematics (Honours)	
MATH 4806 [0.5]	Numerical Linear Algebra (Honours)	
MATH 4816 [0.5]	Numerical Analysis for Differential Equations (Honours)	
2c. 0.5 credit	in MATH at the 4000 level	0.5

2d. 2.0 credits in MATH or STAT at the 3000 level or above 2.0

Total Credits 6.5

Concentration in Applied Statistics and Probability (6.5 credits)

Requirements:

2a. 2.5 credits	in:	2.5
MATH 3107 [0.5]	Linear Algebra III	
STAT 3506 [0.5]	Stochastic Processes and Applications (Honours)	
STAT 3553 [0.5]	Regression Modeling (Honours)	
STAT 3558 [0.5]	Elements of Probability Theory (Honours)	
STAT 3559 [0.5]	Mathematical Statistics (Honours)	
2b. 1.5 credits	from:	1.5
STAT 4500 [0.5]	Parametric Estimation (Honours)	
STAT 4502 [0.5]	Survey Sampling (Honours)	
STAT 4503 [0.5]	Applied Multivariate Analysis (Honours)	
STAT 4504 [0.5]	Statistical Design and Analysis of Experiments (Honours)	
STAT 4506 [0.5]	Nonparametric Statistics (Honours)	
STAT 4508 [0.5]	Stochastic Models (Honours)	
STAT 4509 [0.5]	Advanced Mathematical Modeling (Honours)	
STAT 4555 [0.5]	Monte Carlo Simulation (Honours)	
STAT 4601 [0.5]	Data Mining I (Honours)	
STAT 4603 [0.5]	Time Series and Forecasting (Honours)	
STAT 4604 [0.5]	Statistical Computing (Honours)	
2c. 2.5 credits	in MATH or STAT at the 3000 level or above	2.5
Total Credits		6.5

Concentration in Discrete Mathematics (6.5 credits)

Requirements:

2a. 3.0 credits	in:	3.0
MATH 2100 [1.0]	Algebra	
MATH 3801 [0.5]	Linear Programming	
MATH 3802 [0.5]	Combinatorial Optimization	
MATH 3806 [0.5]	Numerical Analysis (Honours)	
MATH 3855 [0.5]	Discrete Structures and Applications (Honours)	
2b. 1.0 credit	from:	1.0
MATH 4109 [0.5]	Fields and Coding Theory (Honours)	
MATH 4801 [0.5]	Topics in Combinatorics (Honours)	
MATH 4802 [0.5]	Introduction to Mathematical Logic (Honours)	
MATH 4803 [0.5]	Computable Functions (Honours)	
MATH 4805 [0.5]	Theory of Automata (Honours)	
MATH 4807 [0.5]	Game Theory (Honours)	
MATH 4808 [0.5]	Graph Theory and Algorithms (Honours)	
MATH 4811 [0.5]	Combinatorial Design Theory (Honours)	
2c. 0.5 credit	in MATH at the 4000 level	0.5
2d. 2.0 credits	in MATH or STAT at the 3000 level or above	2.0
Total Credits		6.5

Statistics

B. Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 3.0 credits in: 3.0

MATH 1052 [0.5] Calculus and Introductory Analysis I

MATH 1152 [0.5] Introductory Algebra I

MATH 1800 [0.5] Introduction to Mathematical Reasoning

MATH 2052 [0.5] Calculus and Introductory Analysis II

MATH 2152 [0.5] Introductory Algebra II

STAT 1500 [0.5] Introduction to Statistical Computing

2. 1.0 credit in: 1.0

COMP 1005 [0.5] Introduction to Computer Science I

COMP 1006 [0.5] Introduction to Computer Science II

3. 6.0 credits in: 6.0

MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis

MATH 2454 [0.5] Ordinary Differential Equations (Honours)

MATH 3806 [0.5] Numerical Analysis (Honours)

STAT 4905 [0.5] Honours Project (Honours)

STAT 2559 [0.5] Basics of Statistical Modeling (Honours)

STAT 2655 [0.5] Introduction to Probability with Applications (Honours)

STAT 3506 [0.5] Stochastic Processes and Applications (Honours)

STAT 3553 [0.5] Regression Modeling (Honours)

STAT 3558 [0.5] Elements of Probability Theory (Honours)

STAT 3559 [0.5] Mathematical Statistics (Honours)

STAT 4500 [0.5] Parametric Estimation (Honours)

4. 1.0 credit from: 1.0

MATH 2100 [1.0] Algebra

or

MATH 3107 [0.5] Linear Algebra III

and 0.5 credit from:

3000-level Honours Sequence, or:

MATH 3705 [0.5] Mathematical Methods I

MATH 3801 [0.5] Linear Programming

MATH 3807 [0.5] Mathematical Software (Honours)

MATH 3809 [0.5] Introduction to Number Theory and Cryptography

or Mathematics or Statistics at the 4000-level or higher

5. 0.5 credit from the 3000-level Honours Sequence or MATH or STAT at the 4000-level or higher 0.5

6. 1.5 credits in STAT at the 4000-level 1.5

B. Credits Not Included in the Major CGPA (7.0 credits)

7. 4.0 credits not in MATH, STAT or COMP, consisting of: 4.0

a. 1.0 credit in Natural Science Electives

b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives

8. 3.0 credits in free electives 3.0

Total Credits 20.0

Statistics with Concentration in Actuarial Science

B. Math. Honours (20.0 credits)

A. Credits Included in the Major CGPA (14.0 credits)

1. 3.0 credits in: 3.0

MATH 1052 [0.5] Calculus and Introductory Analysis I

MATH 1152 [0.5] Introductory Algebra I

MATH 1800 [0.5] Introduction to Mathematical Reasoning

MATH 2052 [0.5] Calculus and Introductory Analysis II

MATH 2152 [0.5] Introductory Algebra II

STAT 1500 [0.5] Introduction to Statistical Computing

2. 0.5 credit in: 0.5

COMP 1005 [0.5] Introduction to Computer Science I

3. 6.5 credits in: 6.5

MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis

MATH 2454 [0.5] Ordinary Differential Equations (Honours)

MATH 3806 [0.5] Numerical Analysis (Honours)

STAT 2559 [0.5] Basics of Statistical Modeling (Honours)

STAT 2655 [0.5] Introduction to Probability with Applications (Honours)

STAT 2660 [0.5] Mathematics for Finance (Honours)

STAT 3506 [0.5] Stochastic Processes and Applications (Honours)

STAT 3553 [0.5] Regression Modeling (Honours)

STAT 3558 [0.5] Elements of Probability Theory (Honours)

STAT 3559 [0.5] Mathematical Statistics (Honours)

STAT 4500 [0.5] Parametric Estimation (Honours)

STAT 4905 [0.5] Honours Project (Honours)

4. 1.0 credit in: 1.0

MATH 3107 [0.5] Linear Algebra III

and 0.5 credit from:

3000-level Honours Sequence, or:

MATH 3705 [0.5] Mathematical Methods I

MATH 3801 [0.5] Linear Programming

MATH 3807 [0.5] Mathematical Software (Honours)

MATH 3809 [0.5] Introduction to Number Theory and Cryptography

or Mathematics or Statistics at the 4000-level or higher

5. 1.0 credit in: 1.0

STAT 3660 [0.5] Actuarial Mathematics I

STAT 3661 [0.5] Life Contingent Risk Modelling I

6. 2.0 credit in: 2.0

STAT 4508 [0.5] Stochastic Models (Honours)

STAT 4603 [0.5] Time Series and Forecasting (Honours)

STAT 4660 [0.5] Actuarial Mathematics II

STAT 4661 [0.5] Life Contingent Risk Modelling II

B. Credits Not Included in the Major CGPA (7.0 credits):

7. 3.0 credits in: 3.0

BUSI 1001 [0.5]	Principles of Financial Accounting	
BUSI 1002 [0.5]	Management Accounting	
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
8. 2.0 credits in:		2.0
BUSI 2504 [0.5]	Business Finance I	
BUSI 2505 [0.5]	Business Finance II	
BUSI 3500 [0.5]	Applied Corporate Finance	
BUSI 3512 [0.5]	Derivatives	
or		
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 3050 [0.5]	Introduction to Financial Economics	
ECON 4051 [0.5]	Financial Asset Pricing	
ECON 4052 [0.5]	Corporate Financial Economics	
9. 1.0 credit in Natural Science electives		1.0
Total Credits		20.0

Mathematics

B. Math. (15.0 credits)

A. Credits Included in the Major CGPA (7.5 credits)

1. 0.5 credit in:		0.5
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
2. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
or MATH 1004 [0.5]	Calculus for Engineering or Physics	
or MATH 1052 [0.5]	Calculus and Introductory Analysis I	
and		
MATH 2007 [0.5]	Elementary Calculus II	
or MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
or MATH 2052 [0.5]	Calculus and Introductory Analysis II	
3. 1.0 credit in:		1.0
MATH 1107 [0.5]	Linear Algebra I	
or MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
or MATH 1152 [0.5]	Introductory Algebra I	
and		
MATH 2107 [0.5]	Linear Algebra II	
or MATH 2152 [0.5]	Introductory Algebra II	
4. 2.0 credits in:		2.0
MATH 2008 [0.5]	Intermediate Calculus	
MATH 2108 [0.5]	Abstract Algebra I	
MATH 2404 [0.5]	Ordinary Differential Equations I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
5. 3.0 credits from:		3.0
STAT 2509 [0.5]	Introduction to Statistical Modeling II	
MATH or STAT at the 3000-level or higher		

Excluding:

MATH 3101 [0.5]	Algebraic Structures with Computer Applications	
STAT 3502 [0.5]	Probability and Statistics	

B. Credits Not Included in the Major CGPA (7.5 credits)

6. 4.0 credits not in MATH, STAT or COMP, consisting of:	4.0
a. 1.0 credit in Natural Science Electives	
b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives	
7. 3.5 credits in free electives.	3.5
Total Credits	15.0

Computer Mathematics

B. Math. (15.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 0.5 credit in:		0.5
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
2. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
or MATH 1004 [0.5]	Calculus for Engineering or Physics	
or MATH 1052 [0.5]	Calculus and Introductory Analysis I	
and		
MATH 2007 [0.5]	Elementary Calculus II	
or MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
or MATH 2052 [0.5]	Calculus and Introductory Analysis II	
3. 1.0 credit in:		1.0
MATH 1107 [0.5]	Linear Algebra I	
or MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
or MATH 1152 [0.5]	Introductory Algebra I	
and		
MATH 2107 [0.5]	Linear Algebra II	
or MATH 2152 [0.5]	Introductory Algebra II	
4. 2.5 credits in:		2.5
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
COMP 2401 [0.5]	Introduction to Systems Programming	
COMP 2402 [0.5]	Abstract Data Types and Algorithms	
COMP 2404 [0.5]	Introduction to Software Engineering	
5. 2.5 credits in:		2.5
MATH 2008 [0.5]	Intermediate Calculus	
MATH 3804 [0.5]	Design and Analysis of Algorithms I	
MATH 3825 [0.5]	Discrete Structures and Applications	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
STAT 2605 [0.5]	Probability Models	
6. 0.5 credit from:		0.5
MATH 2108 [0.5]	Abstract Algebra I	
MATH 3101 [0.5]	Algebraic Structures with Computer Applications	
7. 1.0 credit from:		1.0
MATH 3801 [0.5]	Linear Programming	
MATH 3802 [0.5]	Combinatorial Optimization	
MATH 3800 [0.5]	Mathematical Modeling and Computational Methods	
MATH 3807 [0.5]	Mathematical Software (Honours)	
MATH 3809 [0.5]	Introduction to Number Theory and Cryptography	
8. 1.0 credit in MATH or STAT at the 3000 level		1.0

9. 0.5 credit in MATH or STAT at the 2000 level or higher	0.5
B. Credits Not Included in the Major CGPA (4.5 credits)	
10. 4.0 credits not in MATH, STAT or COMP, consisting of:	4.0
a. 1.0 credit in Natural Science Electives	
b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives	
11. 0.5 credit in free electives.	0.5
Total Credits	15.0

Statistics

B. Math. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in:	1.0
MATH 1800 [0.5] Introduction to Mathematical Reasoning	
STAT 1500 [0.5] Introduction to Statistical Computing	
2. 1.0 credit in:	1.0
MATH 1007 [0.5] Elementary Calculus I or MATH 1004 [0] Calculus for Engineering or Physics or MATH 1052 [0] Calculus and Introductory Analysis I and	
MATH 2007 [0.5] Elementary Calculus II or MATH 1005 [0] Differential Equations and Infinite Series for Engineering or Physics or MATH 2052 [0] Calculus and Introductory Analysis II	
3. 1.0 credit in:	1.0
MATH 1107 [0.5] Linear Algebra I or MATH 1104 [0] Linear Algebra for Engineering or Science or MATH 1152 [0] Introductory Algebra I and	
MATH 2107 [0.5] Linear Algebra II or MATH 2152 [0] Introductory Algebra II	
4. 4.0 credits in:	4.0
MATH 2008 [0.5] Intermediate Calculus	
STAT 2507 [0.5] Introduction to Statistical Modeling I	
STAT 2509 [0.5] Introduction to Statistical Modeling II	
STAT 3503 [0.5] Regression Analysis	
STAT 3504 [0.5] Analysis of Variance and Experimental Design	
STAT 3507 [0.5] Sampling Methodology	
STAT 3508 [0.5] Elements of Probability Theory	
STAT 3509 [0.5] Mathematical Statistics	
5. 0.5 credit from:	0.5
BUSI 1402 [0.5] Introduction to Business Information and Communication Technologies	
COMP 1005 [0.5] Introduction to Computer Science I	
ECOR 1606 [0.5] Problem Solving and Computers	
6. 0.5 credit in MATH or STAT at the 2000 level	0.5
B. Credits Not Included in the Major CGPA (7.0 credits)	
7. 4.0 credits not in MATH, STAT or COMP, consisting of:	4.0
a. 1.0 credit in Natural Science Electives	
b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives	

8. 3.0 credits in free electives.	3.0
Total Credits	15.0

Computer Science and Mathematics: Concentration in Computing Theory and Numerical Methods

B. Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (16.0 credits)

1. 4.5 credits in:	4.5
MATH 1052 [0.5] Calculus and Introductory Analysis I	
MATH 1152 [0.5] Introductory Algebra I	
MATH 1800 [0.5] Introduction to Mathematical Reasoning	
MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5] Calculus and Introductory Analysis II	
MATH 2100 [1.0] Algebra	
MATH 2152 [0.5] Introductory Algebra II	
2. 6.0 credits in:	6.0
COMP 1405 [0.5] Introduction to Computer Science I	
COMP 1406 [0.5] Introduction to Computer Science II	
COMP 2401 [0.5] Introduction to Systems Programming	
COMP 2402 [0.5] Abstract Data Types and Algorithms	
COMP 2404 [0.5] Introduction to Software Engineering	
COMP 2406 [0.5] Fundamentals of Web Applications	
COMP 2804 [0.5] Discrete Structures II	
COMP 3000 [0.5] Operating Systems	
COMP 3004 [0.5] Object-Oriented Software Engineering	
COMP 3005 [0.5] Database Management Systems	
COMP 3804 [0.5] Design and Analysis of Algorithms I	
COMP 3805 [0.5] Discrete Structures and Applications (Honours)	
3. 0.5 credit from:	0.5
COMP 4905 [0.5] Honours Project	
MATH 4905 [0.5] Honours Project (Honours)	
Concentration in Computing Theory and Numerical Methods	
4. 3.0 credits from:	3.0
MATH 2454 [0.5] Ordinary Differential Equations (Honours)	
STAT 2559 [0.5] Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5] Introduction to Probability with Applications (Honours)	
MATH 3801 [0.5] Linear Programming	
MATH 3806 [0.5] Numerical Analysis (Honours)	
COMP 4804 [0.5] Design and Analysis of Algorithms II	
5. 0.5 credit from:	0.5
MATH 3001 [0.5] Real Analysis I (Honours)	
MATH 3002 [0.5] Real Analysis II (Honours)	
MATH 3003 [0.5] Advanced Differential Calculus (Honours)	

MATH 3057 [0.5]	Functions of a Complex Variable (Honours)	
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
6. 1.0 credit from:		1.0
MATH 4109 [0.5]	Fields and Coding Theory (Honours)	
MATH 4801 [0.5]	Topics in Combinatorics (Honours)	
MATH 4802 [0.5]	Introduction to Mathematical Logic (Honours)	
MATH 4803 [0.5]	Computable Functions (Honours)	
MATH 4805 [0.5]	Theory of Automata (Honours)	
MATH 4806 [0.5]	Numerical Linear Algebra (Honours)	
MATH 4807 [0.5]	Game Theory (Honours)	
MATH 4808 [0.5]	Graph Theory and Algorithms (Honours)	
MATH 4811 [0.5]	Combinatorial Design Theory (Honours)	
MATH 4816 [0.5]	Numerical Analysis for Differential Equations (Honours)	
MATH 4821 [0.5]	Quantum Computing (Honours)	
MATH 4822 [0.5]	Wavelets and Digital Signal Processing (Honours)	
7. 0.5 credit in COMP at the 3000 level or above.		0.5
B. Credits Not Included in the Major CGPA (4.0 credits)		
8. 4.0 credits not in MATH, STAT, or COMP consisting of:		4.0
a. 1.0 credit in Natural Science electives		
b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives		
Total Credits		20.0

Note:

The following courses offered by the School of Business and the Faculty of Engineering are treated as Computer Science courses in this program:

Business

BUSI 2400 [0.5]	Foundations of Information Systems
BUSI 4400 [0.5]	IS Management and Strategy
BUSI 4406 [0.5]	Business Analytics

Engineering

SYSC 3303 [0.5]	Real-Time Concurrent Systems
SYSC 4005 [0.5]	Discrete Simulation/Modeling
SYSC 4507 [0.5]	Computer Systems Architecture

**Computer Science and Mathematics:
Concentration in Statistics and Computing
B. Math. Combined Honours (20.0 credits)**

A. Credits Included in the Major CGPA (16.5 credits)

1. 5.0 credits in:		5.0
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	

MATH 2100 [1.0]	Algebra	
MATH 2152 [0.5]	Introductory Algebra II	
STAT 1500 [0.5]	Introduction to Statistical Computing	
2. 6.0 credits in:		6.0
COMP 1405 [0.5]	Introduction to Computer Science I	
COMP 1406 [0.5]	Introduction to Computer Science II	
COMP 2401 [0.5]	Introduction to Systems Programming	
COMP 2402 [0.5]	Abstract Data Types and Algorithms	
COMP 2404 [0.5]	Introduction to Software Engineering	
COMP 2406 [0.5]	Fundamentals of Web Applications	
COMP 2804 [0.5]	Discrete Structures II	
COMP 3000 [0.5]	Operating Systems	
COMP 3004 [0.5]	Object-Oriented Software Engineering	
COMP 3005 [0.5]	Database Management Systems	
COMP 3804 [0.5]	Design and Analysis of Algorithms I	
COMP 3805 [0.5]	Discrete Structures and Applications (Honours)	
3. 0.5 credit from:		0.5
COMP 4905 [0.5]	Honours Project	
STAT 4905 [0.5]	Honours Project (Honours)	

Concentration in Statistics and Computing:

4. 3.0 credits in:		3.0
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3806 [0.5]	Numerical Analysis (Honours)	
STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
STAT 3558 [0.5]	Elements of Probability Theory (Honours)	
STAT 3559 [0.5]	Mathematical Statistics (Honours)	
5. 0.5 credit from:		0.5
STAT 3506 [0.5]	Stochastic Processes and Applications (Honours)	
STAT 3553 [0.5]	Regression Modeling (Honours)	
6. 1.0 credit in STAT at the 4000 level		1.0
7. 0.5 credit in COMP at the 4000 level		0.5
B. Credits Not Included in the Major CGPA (3.5 credits)		
8. 3.5 credits not in MATH, STAT, or COMP consisting of:		3.5
a. 1.0 credit in Natural Science electives		
b. 2.5 credits from Natural Science, or Approved Arts and Social Sciences electives		
Total Credits		20.0

**Mathematics and Physics
B.Sc. Double Honours (21.5 credits)**

Note that the following courses have minimum grade requirements in their prerequisites. Refer to the section Course Prerequisites under the Mathematics and Statistics programs sections of the calendar.

MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis
MATH 2100 [1.0]	Algebra

MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
A. Credits Included in the Major CGPA (17.0 credits)		
1. 7.5 credits in:		7.5
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2100 [1.0]	Algebra	
MATH 2152 [0.5]	Introductory Algebra II	
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3001 [0.5]	Real Analysis I (Honours)	
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3057 [0.5]	Functions of a Complex Variable (Honours)	
MATH 3705 [0.5]	Mathematical Methods I	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
2. 0.5 credit from:		0.5
MATH 3002 [0.5]	Real Analysis II (Honours)	
MATH 3003 [0.5]	Advanced Differential Calculus (Honours)	
MATH 3106 [0.5]	Introduction to Group Theory (Honours)	
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3606 [0.5]	Modern Physics II	
3. 1.0 credit in 4000-level or higher MATH, STAT		1.0
4. 1.0 credit from:		1.0
PHYS 1001 [0.5]	Foundations of Physics I	
& PHYS 1002 [0.5]	Foundations of Physics II (recommended)	
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II (with an average grade of B- or higher)	
5. 2.0 credits in:		2.0
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2305 [0.5]	Electricity and Magnetism	
PHYS 2401 [0.5]	Thermal Physics	
PHYS 2604 [0.5]	Modern Physics I	
6. 3.0 credits in:		3.0
PHYS 3308 [0.5]	Electromagnetism	
PHYS 3701 [0.5]	Elements of Quantum Mechanics	
PHYS 3802 [0.5]	Advanced Dynamics	

PHYS 4409 [0.5]	Thermodynamics and Statistical Physics	
PHYS 4707 [0.5]	Introduction to Quantum Mechanics I	
PHYS 4708 [0.5]	Introduction to Quantum Mechanics II	
7. 1.0 credit in PHYS at the 4000-level		1.0
8. 1.0 credit from:		1.0
a. MATH 4905 or PHYS 4907 or PHYS 4908 plus 0.5 credit 4000-level MATH or PHYS		
b. PHYS 4909 [1.0]		
B. Credits Not Included in the Major CGPA (4.5 credits)		
9. 1.0 credit from:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
& BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
& ERTH 1009 [0.5]	The Earth System Through Time	
10. 0.5 credit in:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
11. 0.5 credit from:		0.5
NSCI 1000 [0.5]	Seminar in Science	
Approved courses outside the faculties of Science and Engineering and Design		
12. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
13. 1.0 credit in free electives		1.0
Total Credits		21.5

Economics and Mathematics

B.Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (15.5 credits)		
1. 7.5 credits in:		7.5
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2100 [1.0]	Algebra	
MATH 2152 [0.5]	Introductory Algebra II	
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3001 [0.5]	Real Analysis I (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)	
STAT 3558 [0.5]	Elements of Probability Theory (Honours)	
STAT 3559 [0.5]	Mathematical Statistics (Honours)	
2. 0.5 credit from:		0.5
MATH 3002 [0.5]	Real Analysis II (Honours)	

MATH 3003 [0.5]	Advanced Differential Calculus (Honours)	
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
3. 0.5 credit in:		0.5
MATH 4905 [0.5]	Honours Project (Honours)	
4. 1.0 credit in MATH or STAT at the 4000-level		1.0
5. 4.0 credits in:		4.0
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
ECON 2103 [0.5]	Intermediate Macroeconomics II	
ECON 4020 [0.5]	Advanced Microeconomic Theory	
ECON 4021 [0.5]	Advanced Macroeconomic Theory	
6. 2.0 credits in ECON at the 4000-level		2.0
B. Credits Not Included in the Major CGPA (4.5 credits)		
7. 1.0 credit in:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
8. 1.0 credit in Natural Science Electives		1.0
9. 2.5 credits in free electives		2.5
Total Credits		20.0

Notes:

1. An Honours Essay (ECON 4908 [1.0]) may be written by students with Overall and Major CGPAS of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may count for 1.0 credit in ECON at the 4000-level. Qualified students who choose to pursue the Honours Essay option must first complete an Honours Essay prospectus to the satisfaction of both their adviser and the Department of Economics Undergraduate Supervisor.
2. The following courses do not count for credit in this program: ECON 1401, ECON 1402, ECON 2201 (no longer offered), ECON 2202 (no longer offered), ECON 2210, ECON 2220, ECON 2400 (no longer offered), ECON 3001, ECON 4001, ECON 4002, ECON 4004, ECON 4025, ECON 4706, ECON 4707, and ECON 4713.

Economics and Statistics

B.Math. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (16.0 credits)

1. 9.0 credits in:		9.0
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2152 [0.5]	Introductory Algebra II	

MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3107 [0.5]	Linear Algebra III	
STAT 1500 [0.5]	Introduction to Statistical Computing	
STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
STAT 3506 [0.5]	Stochastic Processes and Applications (Honours)	
STAT 3553 [0.5]	Regression Modeling (Honours)	
STAT 3558 [0.5]	Elements of Probability Theory (Honours)	
STAT 3559 [0.5]	Mathematical Statistics (Honours)	
STAT 4502 [0.5]	Survey Sampling (Honours)	
STAT 4503 [0.5]	Applied Multivariate Analysis (Honours)	
2. 0.5 credit in:		0.5
STAT 4905 [0.5]	Honours Project (Honours)	
3. 0.5 credit in STAT at the 4000 level		0.5
4. 4.0 credits in:		4.0
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
ECON 2020 [0.5]	Intermediate Microeconomics I: Producers and Market Structure	
ECON 2030 [0.5]	Intermediate Microeconomics II: Consumers and General Equilibrium	
ECON 2102 [0.5]	Intermediate Macroeconomics I	
ECON 2103 [0.5]	Intermediate Macroeconomics II	
ECON 4020 [0.5]	Advanced Microeconomic Theory	
ECON 4021 [0.5]	Advanced Macroeconomic Theory	
5. 2.0 credits in ECON at the 4000 level		2.0
B. Credits Not Included in the Major CGPA (4.0 credits)		
6. 1.0 credit in:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
COMP 1006 [0.5]	Introduction to Computer Science II	
7. 1.0 credit in Natural Science Electives		1.0
8. 2.0 credits in free electives		2.0
Total Credits		20.0

Notes:

1. An Honours Essay ECON 4908 [1.0] may be written by students with Overall and Major CGPAs of 9.50 or higher. In cases where a grade of B- or higher is earned on this essay, it may count for 1.0 credit in ECON at the 4000-level. Qualified students who choose to pursue the Honours Essay option must first complete an Honours Essay prospectus to the satisfaction of both their adviser and the Department of Economics Undergraduate Supervisor.
2. MATH 2100 [1.0] may replace MATH 3107 and 0.5 credit in free electives in this program.

Program Requirements for Combined B.Math./M.Sc.

This "fast-track" program combines the requirements for Bachelor of Mathematics in Mathematics or Statistics, and Master of Science in Mathematics, into a sequence that

will enable exceptional students to complete in four years of study.

Entry to this program directly from an Ontario High School requires both of the following:

1. an average of 90 per cent or better on Grade 12 Mathematics: Advanced Functions and Grade 12 Mathematics: Calculus and Vectors;
2. an average of 85 per cent or better over six credits in Grade 12 courses of University or University/College type.

Admission, continuation and graduation from the undergraduate portion of the program requires a Major CGPA of 11.0 or better and Overall CGPA of 10.00 or better.

Before entry into the fourth year of this program, students must: obtain a recommendation from the School of Mathematics and Statistics to continue, apply to graduate with a B.Math. degree, by the end of January of their third year, and submit an application for graduate studies to the School by mid-February.

Undergraduate Portion

Students may apply for admission to either the Mathematics or the Statistics versions of the program.

Mathematics (Combined B.Math./M.Sc.) B.Math. (15.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 7.5 credits in:	7.5
MATH 1052 [0.5] Calculus and Introductory Analysis I	
MATH 1152 [0.5] Introductory Algebra I	
MATH 1800 [0.5] Introduction to Mathematical Reasoning	
MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5] Calculus and Introductory Analysis II	
MATH 2100 [1.0] Algebra	
MATH 2152 [0.5] Introductory Algebra II	
MATH 2454 [0.5] Ordinary Differential Equations (Honours)	
MATH 3001 [0.5] Real Analysis I (Honours)	
MATH 3057 [0.5] Functions of a Complex Variable (Honours)	
MATH 3106 [0.5] Introduction to Group Theory (Honours)	
MATH 3158 [0.5] Rings and Fields (Honours)	
STAT 2655 [0.5] Introduction to Probability with Applications (Honours)	
2. 0.5 credit from:	0.5
MATH 3002 [0.5] Real Analysis II (Honours)	
MATH 3003 [0.5] Advanced Differential Calculus (Honours)	
MATH 3008 [0.5] Ordinary Differential Equations (Honours)	
3. 0.5 credit from 3000-level Honours Sequence or MATH or STAT at the 4000-level or higher	0.5

4. 1.5 credits at the 4000-level or higher in MATH or STAT 1.5

B. Credits Not Included in the Major CGPA (5.0 credits)

5. 4.0 credits not in MATH, STAT or COMP, consisting of: 4.0

- a. 1.0 credit in Natural Science Electives
- b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives

6. 1.0 credit in free electives 1.0

Total Credits 15.0

Students wishing to specialize in Stochastics may, with the permission of the School, replace **Credits Included in the Major CGPA** of the Mathematics version with:

1. 6.0 credits in: 6.0

MATH 1052 [0.5] Calculus and Introductory Analysis I	
MATH 1152 [0.5] Introductory Algebra I	
MATH 1800 [0.5] Introduction to Mathematical Reasoning	
MATH 2000 [1.0] Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5] Calculus and Introductory Analysis II	
MATH 2100 [1.0] Algebra	
MATH 2152 [0.5] Introductory Algebra II	
MATH 2454 [0.5] Ordinary Differential Equations (Honours)	
STAT 2559 [0.5] Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5] Introduction to Probability with Applications (Honours)	

2. 2.0 credits in: 2.0

MATH 3001 [0.5] Real Analysis I (Honours)	
STAT 3506 [0.5] Stochastic Processes and Applications (Honours)	
STAT 3558 [0.5] Elements of Probability Theory (Honours)	
STAT 3559 [0.5] Mathematical Statistics (Honours)	

3. 0.5 credit from: 0.5

MATH 3002 [0.5] Real Analysis II (Honours)	
MATH 3003 [0.5] Advanced Differential Calculus (Honours)	
MATH 3057 [0.5] Functions of a Complex Variable (Honours)	
MATH 3008 [0.5] Ordinary Differential Equations (Honours)	

4. 1.5 credits at the 4000-level or higher in MATH or STAT 1.5

Total Credits 10.0

Statistics (Combined B.Math./M.Sc.) B.Math. (15.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 8.5 credits in: 8.5

MATH 1052 [0.5] Calculus and Introductory Analysis I	
MATH 1152 [0.5] Introductory Algebra I	
MATH 1800 [0.5] Introduction to Mathematical Reasoning	

MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2100 [1.0]	Algebra	
MATH 2152 [0.5]	Introductory Algebra II	
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
STAT 1500 [0.5]	Introduction to Statistical Computing	
STAT 2559 [0.5]	Basics of Statistical Modeling (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
STAT 3506 [0.5]	Stochastic Processes and Applications (Honours)	
STAT 3553 [0.5]	Regression Modeling (Honours)	
STAT 3558 [0.5]	Elements of Probability Theory (Honours)	
STAT 3559 [0.5]	Mathematical Statistics (Honours)	
2. 1.5 credits in MATH or STAT at the 4000 level or above		1.5
B. Credits Not Included in the Major CGPA (5.0 credits)		
3. 4.0 credits not in MATH, STAT, or COMP consisting of:		4.0
a. 1.0 credit in Natural Science Electives		
b. 3.0 credits from Natural Science, or Approved Arts and Social Sciences electives		
4. 1.0 credit in free electives		1.0
Total Credits		15.0

Graduate Portion - M.Sc.

During the graduate portion of the "fast-track" program, the student is registered as a graduate student and is covered by the regulations of the Faculty of Graduate Studies.

5. 1.5 credits at the 5000-level or higher in MATH or STAT		1.5
6. 1.0 credit at the 5000-level or higher in mathematics or statistics or from another department or school		1.0
7. Either:		2.0
MATH 4905 or STAT 4905 and 1.5 credits in MATH or STAT at the 5000-level or higher		
or		
an M.Sc. thesis in Mathematics		
Total Credits		4.5

Minor in Mathematics (4.0 credits)

This minor is open to students in all undergraduate programs except programs of the School of Mathematics and Statistics.

Requirements

1. 1.0 credit from:		1.0
MATH 1007 [0.5] Elementary Calculus I & MATH 2007 [0.5] Elementary Calculus II		
or		
MATH 1004 [0.5] Calculus for Engineering or Physics & MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics		
or		
MATH 1052 [0.5] Calculus and Introductory Analysis & MATH 2052 [0.5] I		

Calculus and Introductory Analysis II

2. 1.0 credit from:		1.0
MATH 1107 [0.5] Linear Algebra I or MATH 1104 [0.5] Linear Algebra for Engineering or Science		
MATH 2107 [0.5] Linear Algebra II		
or		
MATH 1152 [0.5] Introductory Algebra I & MATH 2152 [0.5] Introductory Algebra II		
3. 0.5 credit from:		0.5
MATH 1800 [0.5] Introduction to Mathematical Reasoning		
or		
0.5 credit in MATH at 2000-level		
4. 1.0 credit in MATH at the 2000-level or higher		1.0
5. 0.5 credit in MATH at the 3000-level or higher		0.5
6. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Note: As a prerequisite, MATH 1800 opens more options at the 2000-level and above. It is recommended that students taking MATH 1800 do so as early as possible.

Minor in Statistics (4.0 credits)

This minor is open to students in all undergraduate programs except programs of the School of Mathematics and Statistics.

Requirements:

1. 0.5 credit from:		0.5
MATH 1004 [0.5] Calculus for Engineering or Physics		
MATH 1007 [0.5] Elementary Calculus I		
MATH 1009 [0.5] Mathematics for Business		
MATH 1052 [0.5] Calculus and Introductory Analysis I		
2. 0.5 credit from:		0.5
MATH 1104 [0.5] Linear Algebra for Engineering or Science		
MATH 1107 [0.5] Linear Algebra I		
MATH 1119 [0.5] Linear Algebra: with Applications to Business		
MATH 1152 [0.5] Introductory Algebra I		
3. 1.0 credit from:		1.0
STAT 2507 [0.5] Introduction to Statistical Modeling I & STAT 2509 [0.5] Introduction to Statistical Modeling II		
or		
STAT 3502 [0.5] Probability and Statistics & STAT 2509 [0.5] Introduction to Statistical Modeling II		
or		
STAT 2601 [0.5] Business Statistics & STAT 2602 [0.5] Statistical Models for Business Analytics and Finance		
or		
STAT 2601 [0.5] Business Statistics & STAT 2509 [0.5] Introduction to Statistical Modeling II		
or		

ECON 2210 [0.5] Introductory Statistics for
& ECON 2220 [0.5] Economics
Introductory Econometrics

4. 1.5 credits in: 1.5

STAT 3503 [0.5] Regression Analysis

STAT 3504 [0.5] Analysis of Variance and
Experimental Design

STAT 3507 [0.5] Sampling Methodology

5. 0.5 credit from: 0.5

BUSI 1402 [0.5] Introduction to Business
Information and Communication
Technologies (Business students
only)

ECOR 1606 [0.5] Problem Solving and Computers
(Engineering students only)

STAT 1500 [0.5] Introduction to Statistical
Computing

6. The remaining requirements of the major discipline(s)
and degree must be satisfied.

Total Credits 4.0

Regulations

In addition to the program requirements described here, students must satisfy the University regulations common to all undergraduate students, including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Students should consult with the School of Mathematics and Statistics when planning their program and selecting courses.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include

NSCI 1000) if the student received fewer than 10.0 transfer credits; or,

- 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree.

The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5] Cellular Biochemistry

BIOC 4001 [0.5] Methods in Biochemistry

BIOC 4201 [0.5] Advanced Cell Culture and Tissue
Engineering

Biology

BIOL 1103 [0.5] Foundations of Biology I

BIOL 1104 [0.5] Foundations of Biology II

BIOL 2001 [0.5] Animals: Form and Function

BIOL 2002 [0.5] Plants: Form and Function

BIOL 2104 [0.5] Introductory Genetics

BIOL 2200 [0.5] Cellular Biochemistry

BIOL 2600 [0.5] Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs**Science Geography Courses**

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research

GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)
BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.
CHEM (Chemistry)
COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.
ERTH (Earth Sciences), except EARTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use EARTH 2401, EARTH 2402, and EARTH 2403 only as free electives.
Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.
ENSC (Environmental Science)
FOOD (Food Science and Nutrition)
GEOM (Geomatics)
HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except

TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study.

Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work

terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager

9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Mathematics Honours, Combined B.Math./M.Sc.: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to:

Students in any of these programs (excluding Biostatistics) must satisfy the following:

1. Completion of 5.0 or more credits (at least 2.0 in Mathematics/Statistics) at Carleton in any Honours program (excluding Biostatistics), or the Combined B.Math./M.Sc. ("Fast Track") programs, offered by the School of Mathematics and Statistics
2. A major CGPA of 8.00 or higher and an overall CGPA of 6.50 or higher

Students in the B.Math. (Combined Honours) Biostatistics program must satisfy the following:

1. Full-time student in the B.Math. Biostatistics program;
2. An overall CGPA of 8.00 or higher;
3. Successfully completed all required first year courses before beginning the first work term
4. Students must be eligible for third-year standing when they return for a study term after their first work term.

Students in these programs must successfully complete four (4) work terms to obtain the co-op designation.

Co-op Work Term Course: MATH 3999 or STAT 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Mathematics (B. Math.) (Honours)
- Bachelor of Mathematics (B.Math.)

Admission Requirements

B.Math Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

The overall admission cut-off average and/or the prerequisite course average may be considerably higher than the stated minimum requirements for admission to the combined B.Math./M.Sc. in Mathematics or Statistics.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

B.Math

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Mathematics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System.

Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are

described in the Co-operative Education Regulations section of this Calendar.

Mathematics (MATH) Courses

Note:

- See also the course listings under Statistics (STAT) in this Calendar.

Prerequisites for First-year Mathematics Courses in B.Math. Programs

Students who do not have the required Ontario Grade 12 Mathematics courses or equivalents may take MATH 0005 Precalculus: Functions and Graphs and MATH 0006 Precalculus: Trigonometric Functions and Complex Numbers in lieu of Advanced Functions, MATH 0107 Algebra and Geometry in lieu of the algebra component of Calculus and Vectors. These 0000-level mathematics courses serve as alternate prerequisites for MATH 1052 Calculus and Introductory Analysis I and MATH 1152 Introductory Algebra I. These courses would be in addition to the minimum 15.0 credits required for B.Math programs, or 20.0 credits required for B.Math Honours programs.

MATH 0005 [0.5 credit]

Precalculus: Functions and Graphs

Review of algebraic manipulations. Polynomials: the remainder theorem, and the factor theorem; graphing. Real and Complex roots. Absolute values. Inequalities. Functions, including composition of functions, and Inverse functions. Logarithmic and exponential functions. Not available for degree credit for students who have successfully completed: Grade 12 Mathematics - Advanced Functions, or an equivalent High School functions course.

Prerequisite(s): Grade 11 Functions (University/College Preparation), or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 0006 [0.5 credit]

Precalculus: Trigonometric Functions and Complex Numbers

Angles and the unit circle, radian measure. Definitions of trigonometric functions. Fundamental relations, Law of Sines and Cosines. Analytic trigonometry, graphs, inverse functions. Trigonometric identities and equations. Applications in science and engineering. Complex numbers in polar form, de Moivre's Theorem, n-th roots of complex numbers.

Prerequisite(s): Grade 11 Functions (University/College Preparation), or MATH 0005, or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 0009 [0.5 credit]**Calculus and Vectors**

Limits and continuity. Differentiation rules. Trigonometric, logarithmic, and exponential functions, and their derivatives. Curve sketching. Optimization problems. Introduction to vectors. Dot and cross products.

Projections. Equations of lines and planes. Intersection points and distances between points, lines, and planes.

Precludes additional credit for MATH 0007.

Prerequisite(s): Grade 12 Mathematics (Advanced Functions); or both MATH 0005 and MATH 0006; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 0107 [0.5 credit]**Algebra and Geometry**

Vectors in the plane and in 3-space. Linear combinations and linear independence. Equations of lines and planes in space. Solution of systems of linear equations. Proofs by induction. Binomial Theorem. Logic.

Prerequisite(s): Grade 11 Functions (University/College Preparation) or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 1004 [0.5 credit]**Calculus for Engineering or Physics**

Limits. Differentiation of the elementary functions.

Rules of differentiation. Inverse trigonometric functions.

Applications of differentiation: max-min problems, curve sketching, approximations. Definite and indefinite integrals, techniques of integration. Applications to areas and volumes.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1007, MATH 1052.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005 and MATH 0006, or equivalent.

Restricted to students in the Faculty of Engineering, or in certain B.Sc. and B.A.S. programs where specified.

Lectures three hours a week, tutorial one hour a week.

MATH 1005 [0.5 credit]**Differential Equations and Infinite Series for Engineering or Physics**

First-order differential equations. Second-order linear equations with constant coefficients, undetermined coefficients, variation of parameters. Sequences and series, convergence tests, estimation of sums. Power series, Taylor series, remainders. Fourier series.

Precludes additional credit for BIT 2004 (no longer offered), BIT 2007 (no longer offered), MATH 1002 (no longer offered), MATH 2007, MATH 2052, and MATH 2404.

Prerequisite(s): i) MATH 1004; and ii) MATH 1104 (or MATH 1107), either previously or concurrently; or equivalents; or permission of the School. Restricted to students in the Faculty of Engineering, or in certain B.Sc. programs where specified.

Lectures three hours a week, tutorial one hour a week.

MATH 1007 [0.5 credit]**Elementary Calculus I**

Limits. Differentiation of the elementary functions, including trigonometric functions. Rules of differentiation. Applications of differentiation: max-min problems, curve sketching, approximations. Introduction to integration: definite and indefinite integrals, areas under curves, fundamental theorem of calculus.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1004, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1052.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions; or MATH 0005 and MATH 0006; or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 1009 [0.5 credit]**Mathematics for Business**

An introductory course of mathematics for business.

Thorough review of basic arithmetic and algebra.

Elementary functions, their graphs, properties and applications in business models. Limits. Derivatives of elementary functions. Systems of linear equations/inequalities. Geometric series.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, BUSI 1705 (no longer offered), MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1052. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.

Prerequisite(s): Restricted to B.Com. and B.I.B students.

Lectures three hours a week, tutorial one hour a week.

MATH 1052 [0.5 credit]**Calculus and Introductory Analysis I**

Properties of the real numbers. Limits. Sequences and series. Elementary functions. Continuity. Derivatives. Extreme values. Mean Value Theorem. L'Hospital's rules. Antiderivatives. An emphasis is placed on proofs and theory.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1004, MATH 1007, MATH 1009, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005 and MATH 0006 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.

Lectures three hours a week, tutorial one and one half hours a week.

MATH 1104 [0.5 credit]**Linear Algebra for Engineering or Science**

Systems of linear equations. Matrix algebra. Determinants. Invertible matrix theorem. Cramer's rule. Vector space \mathbb{R}^n ; subspaces, bases. Eigenvalues, diagonalization. Linear transformations, kernel, range. Complex numbers (including De Moivre's theorem). Inner product spaces and orthogonality. Applications.

Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1107, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. Note: MATH 1119 is not an acceptable substitute for MATH 1104.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. Restricted to students in the Faculty of Engineering, the School of Computer Science, or in certain B.Sc. and B.A.S. programs where specified.

Lectures three hours a week and tutorial one hour a week.

MATH 1107 [0.5 credit]**Linear Algebra I**

Systems of linear equations; vector space of n -tuples, subspaces, bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre's Theorem, and n -th roots). Eigenvalues, diagonalization and applications. Note: MATH 1119 is not an acceptable substitute for MATH 1107.

Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School.

Lectures three hours a week and tutorial one hour a week.

MATH 1119 [0.5 credit]**Linear Algebra: with Applications to Business**

Introduction to systems of linear equations, geometric interpretation in two and three dimensions, introduction to matrices, vector addition and scalar multiplication, linear dependence, matrix operations, rank, inversion, invertible matrix theorem, determinants. Use of illustrative examples related to business.

Precludes additional credit for , but is not an acceptable substitute for: BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1107. BUSI 1704 (no longer offered), MATH 1109 (no longer offered), MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.

Prerequisite(s): Ontario Grade 12 Mathematics of Data Management; or Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 1152 [0.5 credit]**Introductory Algebra I**

Properties of numbers. Modular arithmetic. Fields, including complex numbers and finite fields. Vector spaces. Matrix algebra. Solutions of linear systems. Linear dependence. Spanning sets. Bases. Subspaces. The rank-nullity theorem. Linear transformations. An emphasis is placed on proofs and theory.

Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1107, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005, MATH 0006, and MATH 0107 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.

Lectures three hours a week, tutorial one and a half hours a week.

MATH 1401 [0.5 credit]**Elementary Mathematics for Economics I**

Functional relations: functional forms and error terms. Graphing economic magnitudes: scatter diagrams, time-series graphs, functional relationships. Applied calculus: mechanics of differentiation and integration, elasticity, consumer/producer surplus. Applied algebra: solving systems of linear equations and Keynesian national-income analysis. Problem solving approaches.

Also listed as ECON 1401.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201; MATH 1007, MATH 1009, MATH 1052, MATH 1104, MATH 1107, MATH 1119, MATH 1152.

Prerequisite(s): Ontario Grade 12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1000 or FYSM 1003, which may be taken concurrently with MATH 1401/ECON 1401.

Lectures three hours a week, tutorial one hour a week.

MATH 1402 [0.5 credit]**Elementary Mathematics for Economics II**

Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.

Also listed as ECON 1402.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201; MATH 1007, MATH 1009, MATH 1052, MATH 1104, MATH 1107, MATH 1119, MATH 1152.

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401/MATH 1401 with a grade of C- or higher.

Lectures three hours a week, tutorial one hour a week.

MATH 1800 [0.5 credit]**Introduction to Mathematical Reasoning**

Elementary logic, propositional and predicate calculus, quantifiers, sets and functions, bijections and elementary counting, the concept of infinity, relations, well ordering and induction. The practice of mathematical proof in elementary number theory and combinatorics.

Precludes additional credit for MATH 1805/COMP 1805.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 1805 [0.5 credit]**Discrete Structures I**

Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing.

Includes: Experiential Learning Activity

Precludes additional credit for MATH 1800.

Prerequisite(s): one Grade 12 university preparation Mathematics course; and one of: COMP 1005 or or COMP 1405 or SYSC 1100 (which may be taken concurrently).

Lectures three hours a week, tutorial one hour a week.

MATH 2000 [1.0 credit]**Multivariable Calculus and Fundamentals of Analysis**

Higher dimensional calculus, chain rule, gradient, line and multiple integrals with applications. Use of implicit and inverse function theorems. Real number axioms, limits, continuous functions, differentiability, infinite series, uniform convergence, the Riemann integral.

Precludes additional credit for BIT 2005 (no longer offered), MATH 2004, MATH 2008, and MATH 3009.

Prerequisite(s): i) MATH 2052 with a grade of C+ or higher, or (MATH 2007 or MATH 1005 with a grade of B+ or higher and permission of the School); and ii) MATH 2152 with a grade of C+ or higher, or MATH 1107 or MATH 1104 with a grade of B+ or higher; and iii) MATH 1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2004 [0.5 credit]**Multivariable Calculus for Engineering or Physics**

Curves and surfaces. Polar, cylindrical and spherical coordinates. Partial derivatives, gradients, extrema and Lagrange multipliers. Exact differentials. Multiple integrals over rectangular and general regions. Integrals over surfaces. Line integrals. Vector differential operators. Green's Theorem, Stokes' theorem, Divergence Theorem. Applications.

Precludes additional credit for BIT 2005, MATH 2000, and MATH 2008.

Prerequisite(s): i) MATH 1005 or MATH 2007; and ii) MATH 1104 or MATH 1107; or permission of the School. Restricted to students in the Faculty of Engineering, or in certain B.Sc. programs where specified.

Lectures three hours a week, tutorial one hour a week.

MATH 2007 [0.5 credit]**Elementary Calculus II**

Techniques of integration, improper integrals. Polar coordinates, parametric equations. Indeterminate forms, sequences and series, Taylor's formula and series.

Precludes additional credit for BIT 2007 (no longer offered), MATH 1002 (no longer offered), MATH 1005, MATH 2052.

Prerequisite(s): i) MATH 1004, or a grade of C- or higher in MATH 1007; or MATH 1052 and permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2008 [0.5 credit]**Intermediate Calculus**

Partial differentiation, chain rule, gradient, line and multiple integrals with applications, transformations of multiple integrals.

Precludes additional credit for BIT 2005 (no longer offered), MATH 2000, and MATH 2004.

Prerequisite(s): one of MATH 1005, MATH 2052, or MATH 2007, and one of MATH 1104, MATH 1107, or MATH 1152.

Lectures three hours a week and one hour tutorial.

MATH 2052 [0.5 credit]**Calculus and Introductory Analysis II**

Definite, indefinite integrals. Improper integrals. The fundamental theorem of calculus. An introduction to differential equations. Sequences and series of functions. Power series. Taylor's formulae. Uniform convergence. An emphasis is placed on proofs and theory.

Precludes additional credit for BIT 2007, MATH 1002 (no longer offered), MATH 1005, MATH 2007.

Prerequisite(s): (i) MATH1052 with a grade of C- or higher or (MATH1007 or MATH1004 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one and one half hours a week.

MATH 2100 [1.0 credit]**Algebra**

Introduction to group theory: permutation groups, Lagrange's theorem, normal subgroups, homomorphism theorems. Introduction to ring theory: ring of polynomials, integral domains, ideals, homomorphism theorems.

Hermitian forms, spectral theorem for normal operators, bilinear and quadratic forms, classical groups.

Precludes additional credit for MATH 2108 and MATH 3101.

Prerequisite(s): i) MATH 2152 with a grade of C+ or higher, or (MATH 2107 with a grade of B+ or higher and permission of the School); and ii) MATH 1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2107 [0.5 credit]**Linear Algebra II**

Finite-dimensional vector spaces (over \mathbb{R} and \mathbb{C}), subspaces, linear independence and bases. Linear transformations and matrices. Inner product spaces (over \mathbb{R} and \mathbb{C}); Orthonormal bases. Eigenvalues and diagonalization. Bilinear and quadratic forms; principal axis theorem.

Precludes additional credit for MATH 1102 (no longer offered), MATH 2152.

Prerequisite(s): i) MATH 1104, or a grade of C- or higher in MATH 1107 or MATH 1109; and ii) a grade of C- or higher in MATH 1007 or equivalent; or MATH 1152 and permission of the School. Note: in item i), MATH 1119 is NOT acceptable as a substitute for MATH 1109.

Lectures three hours a week and one hour tutorial.

MATH 2108 [0.5 credit]**Abstract Algebra I**

Sets and relations, number theory, group theory, ring theory, cardinal numbers.

Precludes additional credit for MATH 3101 and MATH 2100.

Prerequisite(s): i) MATH 2152 or MATH 2107; and ii) MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or COMP 1805; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 2152 [0.5 credit]**Introductory Algebra II**

Linear transformations. Determinants. Eigenvalues and eigenspaces. Diagonalization and other canonical forms. Inner products. An emphasis is placed on proofs and theory.

Precludes additional credit for MATH 1102 (no longer offered) and MATH 2107.

Prerequisite(s): (i) MATH1152 with a grade of C- or higher or (MATH1107 or MATH1104 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one and a half hours a week.

MATH 2210 [0.5 credit]**Introduction to Geometry**

An introduction to classical geometry; Euclidean plane geometry; plane tiling; polytopes in three and four dimensions; curved surfaces; Euler characteristic. This course is intended for a general audience, and is available to B.Math. students for credit only as a free elective.

Prerequisite(s): Grade 12 Mathematics and second-year standing.

Lectures three hours a week, tutorial one hour a week.

MATH 2404 [0.5 credit]**Ordinary Differential Equations I**

First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.

Precludes additional credit for BIT 2004 (no longer offered), MATH 1005, MATH 2454.

Prerequisite(s): MATH 2052 and MATH 1152 (or MATH 1107 and MATH 2007).

Lectures three hours a week and one hour tutorial.

MATH 2454 [0.5 credit]**Ordinary Differential Equations (Honours)**

Existence and uniqueness theorems. First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.

Precludes additional credit for MATH 2404, BIT 2004 (no longer offered).

Prerequisite(s): MATH 2052 or MATH 2007 or MATH 1005 with a grade of C+ or higher, and MATH 2152 or MATH 2107 with a grade of C+ or higher.

Lectures three hours a week, tutorial one hour a week.

MATH 2800 [0.5 credit]**Discrete Mathematics and Algorithms**

An introduction to discrete mathematics and algorithms in the context of the computational sciences. Basic number theory and counting methods, algorithms for strings, trees and sequences. Applications to DNA and protein sequencing problems. Analysis and complexity of algorithms.

Also listed as CMPS 2800.

Precludes additional credit for Only one of MATH 1805/COMP 1805 or MATH 2800/CMPS 2800 may count for credit in a B.Math. program.

Prerequisite(s): COMP 1006 and at least one of MATH 1007, MATH 1107, or STAT 2507.

Lectures three hours a week.

MATH 2907 [0.5 credit]**Directed Studies (Honours)**

Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3001 [0.5 credit]**Real Analysis I (Honours)**

Metric spaces and their topologies, continuous maps, completeness, compactness, connectedness, introduction to Banach spaces.

Prerequisite(s): MATH 2000 with a grade of C- or higher; or (MATH 3009 and MATH 1800) each with a grade of B or higher, and permission of the instructor; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3002 [0.5 credit]**Real Analysis II (Honours)**

Function spaces, pointwise and uniform convergence, Weierstrass approximation theorem, Lebesgue measure and Lebesgue integral on the real line, Hilbert space, Fourier series.

Prerequisite(s): MATH 3001 with a grade of C- or higher, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3003 [0.5 credit]**Advanced Differential Calculus (Honours)**

Review of multivariable differentiation and integration. Vector fields, differential forms and exterior algebra. Introduction to manifolds and tangent bundles. Stokes' Theorem. Applications such as differential equations and the calculus of variations.

Prerequisite(s): MATH 3001 with a grade of C- or higher, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3007 [0.5 credit]**Functions of a Complex Variable**

Analytic functions, contour integration, residue calculus, conformal mapping. Intended for non-engineering students.

Precludes additional credit for MATH 3057 and PHYS 3807.

Prerequisite(s): one of MATH 2004, MATH 2008 or MATH 2009, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3008 [0.5 credit]**Ordinary Differential Equations (Honours)**

Analytic ordinary differential equations: series solutions of ordinary differential equations about ordinary and regular singular points. Asymptotic solutions. Sturm-Liouville theory. Bessel and Legendre functions. Fourier series.

Precludes additional credit for MATH 3404 and PHYS 3808.

Prerequisite(s): i) MATH 2000 with a grade of C- or higher, or (MATH 3009 with a grade of B or higher, and permission of the instructor); and ii) MATH 2454 with a grade of C- or higher, or (MATH 2404 with a grade of B or higher, and permission of the instructor).

Lectures three hours a week and one hour tutorial.

MATH 3009 [0.5 credit]**Introductory Analysis**

The real number system, sequences and series, functions of a single real variable, derivatives, the definite integral, uniform convergence.

Precludes additional credit for MATH 2000.

Prerequisite(s): one of MATH 2004, MATH 2008, MATH 2009, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3057 [0.5 credit]**Functions of a Complex Variable (Honours)**

Analytic functions, contour integration, residue calculus, conformal mappings.

Precludes additional credit for MATH 3007 and PHYS 3807.

Prerequisite(s): MATH 2000 with a grade of C- or higher; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3101 [0.5 credit]**Algebraic Structures with Computer Applications**

Introduction to algebraic structures: groups, rings, fields, lattices, and Boolean algebras; with applications of interest to students in Computer Science. This course may not be used to meet the 3000-level course requirements in any B.Math or B.Math Honours program in Mathematics and Statistics.

Precludes additional credit for MATH 2108 and MATH 2100.

Prerequisite(s): i) MATH 2107 or MATH 2152; and ii) either COMP 1805 or MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3106 [0.5 credit]**Introduction to Group Theory (Honours)**

Homomorphism theorems; groups acting on sets; permutation groups and groups of matrices; Sylow theory for finite groups; finitely generated abelian groups; generators and relations; applications.

Precludes additional credit for MATH 3108.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B or higher; and MATH 1800 with a grade of B or higher; and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3107 [0.5 credit]**Linear Algebra III**

Similarity and unitary triangularization of matrices. Direct methods of solving a system of linear equations. Iterative techniques. Bounds for eigenvalues. Power method and deflation techniques of approximation. Emphasis is primarily on computational aspects.

Prerequisite(s): i) a grade of C- or higher in MATH 2152 or MATH 2107; and ii) credit in MATH 2052 or MATH 2007; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3108 [0.5 credit]**Abstract Algebra II**

Groups and rings. Permutations. Finite symmetry groups. Polynomials, unique factorization domains. Quotient rings, ideals. Field extensions, finite fields. Polynomial equations. Geometric constructions - three famous problems: duplication of the cube, trisection of an arbitrary angle, quadrature of the circle.

Precludes additional credit for MATH 3106 and MATH 3158.

Prerequisite(s): MATH 2108, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3158 [0.5 credit]**Rings and Fields (Honours)**

Rings, integral domains, Euclidean and principal ideal domains, fields, polynomial rings over a field, algebraic extensions of fields, the fundamental theorem of Galois theory, finite fields, applications.

Precludes additional credit for MATH 3108.

Prerequisite(s): MATH 2100 with a grade of C- or higher, or (MATH 2108 or MATH 3101 with a grade of B or higher and MATH 1800 with a grade of B or higher and permission of the instructor), or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3206 [0.5 credit]**Plane Projective Geometry**

Axioms of Desarguesian geometry, principle of duality; projectivities, perspectivities, and the fundamental theorem; collineations (homologies and elations); correlations (polarities and conics); algebraic model; projective curves; introduction to finite projective planes.

Precludes additional credit for MATH 3256.

Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.

Lectures three hours a week and one hour tutorial.

MATH 3210 [0.5 credit]**Euclidean and Non-Euclidean Geometry**

Euclidean isometry and similarity groups; geometry of circles; inversion; hyperbolic geometry: Poincare disk model of the hyperbolic plane.

Precludes additional credit for MATH 3205.

Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.

Lectures three hours a week, tutorial one hour a week.

MATH 3306 [0.5 credit]**Elements of Set Theory (Honours)**

Axioms of set theory. Development of the systems of natural numbers and the real numbers. Axiom of choice, Zorn's lemma, well-ordering. The Schröder-Bernstein theorem, cardinal numbers, ordinal numbers, transfinite induction, cardinal and ordinal arithmetics.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B or higher; and MATH 1800 with a grade of B or higher; and permission of the instructor); or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3355 [0.5 credit]**Number Theory and Applications (Honours)**

Congruences, distribution of primes, arithmetic functions, primitive roots, quadratic residues, quadratic reciprocity law, continued fractions, Diophantine equations, and applications: public key cryptography, primality testing and factoring in relation to cryptography.

Precludes additional credit for MATH 3809.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B- or higher; and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3404 [0.5 credit]**Ordinary Differential Equations II**

Series solutions of ordinary differential equations of second order about regular singular points; asymptotic solutions. Systems of ordinary differential equations of first order; matrix methods. Existence and uniqueness theorems. Nonlinear autonomous systems of order 2; qualitative theory. Numerical solutions of ordinary differential equations.

Precludes additional credit for MATH 3008.

Prerequisite(s): MATH 2404, MATH 2008; and MATH 2152 or MATH 2107.

Lectures three hours a week and one hour tutorial.

MATH 3705 [0.5 credit]**Mathematical Methods I**

Laplace transforms, series solutions of ordinary differential equations, the Frobenius method. Fourier series and Fourier transforms, solutions of partial differential equations of mathematical physics, boundary value problems, applications.

Precludes additional credit for PHYS 3808. This course may be taken for credit as a 3000-level Honours

Mathematics course by students in any Honours program in the School of Mathematics and Statistics.

Prerequisite(s): i) MATH 1005 or MATH 2404, and ii) MATH 2004 or MATH 2008 or MATH 2009; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3800 [0.5 credit]**Mathematical Modeling and Computational Methods**

Design and analysis of mathematical models for problems in science. Computational methods, including function evaluation, interpolation, solution of linear equations, root finding, integration, solution of differential equations, Fourier series and Monte Carlo methods.

Includes: Experiential Learning Activity

Also listed as CMPS 3800.

Precludes additional credit for MATH 3806/COMP 3806.

Prerequisite(s): i) MATH 1107 or MATH 1104; ii) MATH 1005 or MATH 2007; and iii) knowledge of a computer language.

Lectures three hours a week, laboratory one hour a week.

MATH 3801 [0.5 credit]**Linear Programming**

Systems of linear inequalities, formulation of linear programming problems, geometric method, the simplex method, duality theory, complementary slackness, sensitivity analysis, branch-and-bound method and cutting plane method for integer linear programming, applications and extensions.

Precludes additional credit for ECON 4004, SYSC 3200.

Prerequisite(s): MATH 2152 or MATH 2107, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3802 [0.5 credit]**Combinatorial Optimization**

Network flow problems, network simplex method, max-flow min-cut problem, integral polyhedra, minimum-weight spanning tree problem, maximum matching problem, maximum stable set problem, introduction to approximation algorithms.

Prerequisite(s): MATH 3801 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3804 [0.5 credit]**Design and Analysis of Algorithms I**

An introduction to the design and analysis of algorithms.

Topics include: recurrence relations, sorting and searching, divide-and-conquer, dynamic programming, greedy algorithms, NP-completeness.

Also listed as COMP 3804.

Prerequisite(s): i) one of COMP 2402 or SYSC 2100; and ii) one of COMP 2804 or MATH 3855 or MATH 3825 or COMP 3805.

Lectures and tutorials three to four and a half hours a week.

MATH 3806 [0.5 credit]**Numerical Analysis (Honours)**

Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. Implementation of numerical methods using a computer language.

Includes: Experiential Learning Activity

Precludes additional credit for MATH 3800.

Prerequisite(s): i) MATH 2000 with a grade of C- or higher; and ii) MATH 1152 with a grade of C- or higher, or (MATH 1107 or MATH 1104 with a grade of B or higher and permission of the instructor).

Lectures three hours a week, laboratory one hour a week.

MATH 3807 [0.5 credit]**Mathematical Software (Honours)**

Implementation of numerical methods using numerical software packages. Development of scientific and/or operations research applications using application programming interfaces of numerical or optimization libraries. Functional programming for data analysis and machine learning. Experience working with Python, C++, or Java is essential.

Includes: Experiential Learning Activity

Also listed as COMP 3807.

Prerequisite(s): A grade of C- or higher in MATH 3806 or COMP 3806.

Lectures three hours a week, laboratory one hour a week.

MATH 3808 [0.5 credit]**Mathematical Analyses of Games of Chance**

This course covers mathematics used in the modern casino gaming industry. The topics include probabilities, odds, house advantages, variance and risks, optimal strategies, random walks and gambler's ruin, and gaming revenue estimation. Examples are taken from various games such as Roulette, Blackjack, and Poker.

Prerequisite(s): one of STAT 2655, STAT 2605, STAT 2507, STAT 2606, STAT 3502, or MATH 3825 or MATH 3855.

Lectures three hours a week, tutorial one hour a week.

MATH 3809 [0.5 credit]**Introduction to Number Theory and Cryptography**

Congruences, distribution of primes, general cryptographic systems, public key cryptographic systems and authentication using number theory, primality testing and factoring in relation to cryptography, continued fractions and Diophantine equations.

Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100; knowledge of a computer language.

Lectures three hours a week and one hour tutorial.

MATH 3819 [0.5 credit]**Modern Computer Algebra**

Algorithms for multiplication, division, greatest common divisors and factorization over the integers, finite fields and polynomial rings. Basic tools include modular arithmetic, discrete Fourier transform, Chinese remainder theorem, Newton iteration, and Hensel techniques. Some properties of finite fields and applications to cryptography.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100, COMP 1005 or equivalent; or permission of the School.

Lectures three hours a week, tutorial/laboratory one hour a week.

MATH 3825 [0.5 credit]**Discrete Structures and Applications**

Enumeration: elementary methods, inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory and algorithms: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes.

Precludes additional credit for MATH 3805 (no longer offered), and MATH 3855 and COMP 3805.

Prerequisite(s): MATH 2108 or MATH 3101.

Lectures three hours a week, tutorial one hour a week.

MATH 3855 [0.5 credit]**Discrete Structures and Applications (Honours)**

Enumeration: inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes. Designs and finite geometries. Symmetry and counting.

Also listed as COMP 3805.

Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101) with a grade of B or higher.

Lectures three hours a week, tutorial one hour a week.

MATH 3907 [0.5 credit]**Directed Studies**

Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3999 [0.0 credit]**Co-operative Work Term Report (Honours)**

On completion of each work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 4002 [0.5 credit]**Fourier Analysis (Honours)**

Fourier series, Fourier integrals; introduction to harmonic analysis on locally compact abelian groups, Plancherel Theorem, Pontryagin duality; selected applications.

Prerequisite(s): MATH 3001 or permission of the School.

Lectures three hours a week.

MATH 4003 [0.5 credit]**Functional Analysis (Honours)**

Banach spaces and bounded linear operators, Hahn-Banach extension and separation, dual spaces, bounded inverse theorems, uniform boundedness principle, applications. Compact operators.

Prerequisite(s): MATH 4007 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5008, for which additional credit is precluded.

Lectures three hours a week.

MATH 4007 [0.5 credit]**Measure and Integration Theory (Honours)**

Lebesgue measure and integration on the real line; sigma algebras and measures; integration theory; L_p spaces; Fubini's theorem; decomposition theorems and Radon-Nikodym derivatives.

Prerequisite(s): MATH 3001 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5007, for which additional credit is precluded.

Lectures three hours a week.

MATH 4102 [0.5 credit]**Group Representations and Applications (Honours)**

An introduction to the group representations and character theory, with selected applications.

Prerequisite(s): MATH 3106, or a grade of B or higher in MATH 3108.

Also offered at the graduate level, with different requirements, as MATH 5102, for which additional credit is precluded.

Lectures three hours a week.

MATH 4105 [0.5 credit]**Rings and Modules (Honours)**

Fundamental concepts in rings and modules, structure theorems, applications.

Prerequisite(s): MATH 3158 or permission of the School.

Lectures three hours a week.

MATH 4106 [0.5 credit]**Group Theory (Honours)**

Fundamental principles as applied to abelian, nilpotent, solvable, free and finite groups; representations.

Prerequisite(s): MATH 3106 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5106, for which additional credit is precluded.

Lectures three hours a week.

MATH 4107 [0.5 credit]**Commutative Algebra (Honours)**

Fields, including algebraic and transcendental extensions, Galois theory, valuation theory; Noetherian commutative rings, including Noether decomposition theorem and localization.

Prerequisite(s): MATH 3158 or permission of the School.

Lectures three hours a week.

MATH 4108 [0.5 credit]**Homological Algebra and Category Theory (Honours)**

Axioms of set theory; categories, functors, natural transformations; free, projective, injective and flat modules; tensor products and homology functors, derived functors; dimension theory.

Prerequisite(s): MATH 3158 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5108, for which additional credit is precluded.

Lectures three hours a week.

MATH 4109 [0.5 credit]**Fields and Coding Theory (Honours)**

Introduction to field theory, emphasizing the structure of finite fields, primitive elements and irreducible polynomials. The influence of computational problems will be considered. Theory and applications of error-correcting codes: algebraic codes, convolution codes, decoding algorithms, and analysis of code performance.

Prerequisite(s): MATH 2100, or MATH 3101 or MATH 2108 or equivalent; or permission of the School.

Lectures three hours a week.

MATH 4205 [0.5 credit]**Introduction to General Topology (Honours)**

Topological spaces, maps, subspaces, product and identification topologies, separation axioms, compactness, connectedness.

Prerequisite(s): MATH 3001 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5205, for which additional credit is precluded.

Lectures three hours a week.

MATH 4206 [0.5 credit]**Introduction to Algebraic Topology (Honours)**

An introduction to homotopy theory. Topics include the fundamental group, covering spaces and the classification of two-dimensional manifolds.

Prerequisite(s): MATH 3106 and MATH 4205; or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5206, for which additional credit is precluded.

Lectures three hours a week.

MATH 4207 [0.5 credit]**Foundations of Geometry (Honours)**

A study of at least one modern axiom system of Euclidean and non-Euclidean geometry, embedding of hyperbolic and Euclidean geometries in the projective plane, groups of motions, models of non-Euclidean geometry.

Prerequisite(s): MATH 3106 (may be taken concurrently) or permission of the School.

Lectures three hours a week.

MATH 4208 [0.5 credit]**Introduction to Differentiable Manifolds (Honours)**

Introduction to differentiable manifolds; Riemannian manifolds; vector fields and parallel transport; geodesics; differential forms on a manifold; covariant derivative; Betti numbers.

Prerequisite(s): MATH 3002 or permission of the School.

Lectures three hours a week.

MATH 4305 [0.5 credit]**Analytic Number Theory (Honours)**

Dirichlet series, characters, Zeta-functions, prime number theorem, Dirichlet's theorem on primes in arithmetic progressions, binary quadratic forms.

Prerequisite(s): MATH 3057 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5305, for which additional credit is precluded.

Lectures three hours a week.

MATH 4306 [0.5 credit]**Algebraic Number Theory (Honours)**

Algebraic number fields, bases, algebraic integers, integral bases, arithmetic in algebraic number fields, ideal theory, class number.

Prerequisite(s): MATH 3158 (may be taken concurrently) or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5306, for which additional credit is precluded.

Lectures three hours a week.

MATH 4600 [0.5 credit]**Case Studies in Operations Research (Honours)**

Applications of the principles of Operations Research to practical problems in business, management, and science. Students present at least one case and analyze cases in the published literature. Cases may also be presented by visiting practitioners.

Includes: Experiential Learning Activity

Precludes additional credit for Students in Honours Mathematics/Statistics programs may only take course as a free option.

Prerequisite(s): STAT 2509 (or STAT 2559) and MATH 3801; or permission of the School.

Seminars three hours a week.

MATH 4700 [0.5 credit]**Partial Differential Equations (Honours)**

First-order partial differential equations. Classification of second-order linear partial differential equations; the diffusion equation, wave equation and Laplace's equation; separation of variables; Fourier and Laplace transform methods for the solution of initial/boundary value problems; Green's functions.

Prerequisite(s): MATH 3057 and one of MATH 3008 or MATH 3705, or permission of the School.

Lectures three hours a week.

MATH 4701 [0.5 credit]**Topics in Differential Equations (Honours)**

Topics in the theory and application of differential equations; for example, hyperbolic systems, fluid dynamics, nonlinear wave equations, optimal mass transport, control theory, calculus of variations.

Prerequisite(s): i) MATH 3008; and ii) one of MATH 3001 or MATH 3057; or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5407, for which additional credit is precluded.

Lectures three hours a week.

MATH 4703 [0.5 credit]**Dynamical Systems (Honours)**

Basic concepts of dynamical systems. Vector formulation for systems. Theory of autonomous systems in one, two and higher dimensions. Limit sets, stability. Phase plane, qualitative interpretation, limit cycles and attractors. Parametric dependence, bifurcations and chaos. Applications.

Prerequisite(s): MATH 3001 and MATH 3008 or permission of the School.

Lectures three hours a week.

MATH 4708 [0.5 credit]**Asymptotic Methods of Applied Mathematics (Honours)**

Asymptotic series: properties, matching, application to differential equations. Asymptotic expansion of integrals: elementary methods, methods of Laplace, stationary phase and steepest descent, Watson's lemma, Riemann-Lebesgue lemma. Perturbation methods: regular and singular perturbation for differential equations, multiple scale analysis, boundary layer theory, WKB theory.

Prerequisite(s): MATH 3057 and at least one of MATH 3008 or MATH 3705, or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5408, for which additional credit is precluded.

Lectures three hours a week.

MATH 4801 [0.5 credit]**Topics in Combinatorics (Honours)**

An in-depth study of one or more topics from: generating functions, Polya's theory of counting, block designs, coding theory, partially ordered sets and Ramsey theory.

Prerequisite(s): MATH 2100 and MATH 3855 or permission of the School.

Lectures three hours a week.

MATH 4802 [0.5 credit]**Introduction to Mathematical Logic (Honours)**

Symbolic logic, propositional and predicate calculi, set theory and model theory, completeness.

Prerequisite(s): MATH 2100 or permission of the School.

Lectures three hours a week.

MATH 4803 [0.5 credit]**Computable Functions (Honours)**

Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness.

Also listed as COMP 4803.

Prerequisite(s): MATH 2100 or MATH 3855 or permission of the School.

Lectures three hours a week.

MATH 4805 [0.5 credit]**Theory of Automata (Honours)**

Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems.

Also listed as COMP 4805.

Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5605, for which additional credit is precluded.

Lectures three hours a week.

MATH 4806 [0.5 credit]**Numerical Linear Algebra (Honours)**

Matrix computations, conditioning/stability, direct methods for linear systems, classical iterative methods: Jacobi, Gauss-Seidel; modern iterative methods, Arnoldi decomposition, GMRES and other Krylov subspace-based methods for sparse and structured matrices; numerical solution of eigenvalue problems, implementation using suitable programming language, application to differential equations/optimization problems.

Also listed as COMP 4806.

Prerequisite(s): MATH 2152 or MATH 2107; MATH 2000 and MATH 3806; or permission of the School.

Lectures three hours a week.

MATH 4807 [0.5 credit]**Game Theory (Honours)**

One-player games, two-player zero-sum games, multi-player games, games in normal form, games in extensive form, utility theory, Nash equilibrium and Nash arbitration scheme, games in characteristic function form, cooperative solutions, dominations, stable sets, core, Shapley value, applications of game theory.

Prerequisite(s): MATH 3801 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5607, for which additional credit is precluded.

Lectures three hours a week.

MATH 4808 [0.5 credit]**Graph Theory and Algorithms (Honours)**

Paths, circuits, Eulerian and Hamiltonian graphs, connectivity, colouring problems, matching, Ramsey theory, network flows.

Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855 or permission of the School.

Lectures three hours a week.

MATH 4809 [0.5 credit]**Mathematical Cryptography (Honours)**

Topics covered include: a general survey of public key cryptography; classical applications of finite fields and number theory; relevant background in geometry and algebraic curves; computational issues concerning elliptic curves; elliptic curve cryptosystems; security issues.

Prerequisite(s): MATH 3158, or permission of the School.

Lectures three hours a week.

MATH 4811 [0.5 credit]**Combinatorial Design Theory (Honours)**

Existence and construction of combinatorial designs: finite geometries, pairwise balanced designs, balanced incomplete block designs, Steiner triple systems, symmetric designs, PBD closure, latin squares, transversal designs, and applications to information theory.

Prerequisite(s): MATH 3855, or permission of the School.

Lectures three hours a week.

MATH 4816 [0.5 credit]**Numerical Analysis for Differential Equations (Honours)**

Floating point arithmetic; numerical solution of ODEs; finite difference methods for PDEs; stability, accuracy and convergence: von Neumann analysis, CFL condition, Lax Theorem. Finite element methods: boundary value problems and elliptic PDEs. Spectral and pseudo-spectral methods.

Prerequisite(s): MATH 2454 and MATH 3806, or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5806, for which additional credit is precluded.

Lectures three hours a week.

MATH 4821 [0.5 credit]**Quantum Computing (Honours)**

Space of quantum bits; entanglement. Observables in quantum mechanics. Density matrix and Schmidt decomposition. Quantum cryptography. Classical and quantum logic gates. Quantum Fourier transform. Shor's quantum algorithm for factorization of integers.

Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5821, for which additional credit is precluded.

Lectures three hours a week.

MATH 4822 [0.5 credit]**Wavelets and Digital Signal Processing (Honours)**

Lossless compression methods. Discrete Fourier transform and Fourier-based compression methods. JPEG and MPEG. Wavelet analysis. Digital filters and discrete wavelet transform. Daubechies wavelets. Wavelet compression.

Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5822, for which additional credit is precluded.

Lectures three hours a week.

MATH 4905 [0.5 credit]**Honours Project (Honours)**

Consists of a written report on some approved topic or topics in the field of mathematics, together with a short lecture on the report.

Includes: Experiential Learning Activity

Prerequisite(s): B.Math.(Honours) students only.

MATH 4907 [0.5 credit]**Directed Studies (Honours)**

Prerequisite(s): B.Math.(Honours) students only.

Statistics (STAT) Courses**STAT 1500 [0.5 credit]****Introduction to Statistical Computing**

Basics of programming in R and introduction to statistical software; generating statistical plots; computing descriptive statistics; performing basic statistical procedures; fundamentals of numerical analysis; optimization; generating random numbers, performing simple simulations and simulation-based inference.

Includes: Experiential Learning Activity

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent.

Lectures three hours a week, laboratory one hour a week.

STAT 2507 [0.5 credit]**Introduction to Statistical Modeling I**

A data-driven introduction to statistics. Basic descriptive statistics, introduction to probability theory, random variables, discrete and continuous distributions, contingency tables, sampling distributions, distribution of sample mean, Central Limit Theorem, interval estimation and hypothesis testing. A statistical software package will be used.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2601, STAT 2606, and STAT 3502.

May not be counted for credit in any program if taken after successful completion of STAT 2559.

Prerequisite(s): an Ontario Grade 12 university-preparation Mathematics or equivalent, or permission of the School of Mathematics and Statistics.

Lectures three hours a week, laboratory one hour a week.

STAT 2509 [0.5 credit]**Introduction to Statistical Modeling II**

A data-driven approach to statistical modeling. Basics of experimental design, analysis of variance, simple linear regression and correlation, nonparametric procedures. A statistical software package will be used.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 2602, STAT 2607, ECON 2202, ECON 2220.

Prerequisite(s): STAT 2507 or STAT 2601 or STAT 2606 or STAT 3502; or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 2559 [0.5 credit]**Basics of Statistical Modeling (Honours)**

Estimation and hypothesis testing for one and two samples, analysis of categorical data, basics of experimental design, analysis of variance, simple linear regression and correlation. Nonparametric procedures. A statistical software package will be used.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 2655 or permission of the School.

Lectures three hours a week, tutorial/laboratory one hour a week.

STAT 2601 [0.5 credit]**Business Statistics**

Introduction to statistical computing, descriptive statistics, probability concepts, interval estimation and hypothesis testing, categorical data analysis. Introduction to simple regression, multiple regression, and time series. Emphasis on the development of an ability to interpret results of statistical analyses with applications from business.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606 (no longer offered) and STAT 3502.

Prerequisite(s): MATH 1009. Restricted to B.Com. and B.I.B students.

Lectures three hours a week and laboratory one hour a week.

STAT 2602 [0.5 credit]**Statistical Models for Business Analytics and Finance**

Analysis of variance, multiple regression (including polynomial regression), logistic and Poisson regression, probit models, time series (including decomposition into components, exponential smoothing, model diagnostics and ARIMA models), Monte Carlo simulation.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 2607 (no longer offered).

Prerequisite(s): STAT 2601.

Lectures three hours a week and laboratory one hour a week.

STAT 2605 [0.5 credit]**Probability Models**

Basic probability; discrete random variables with focus on binomial and Poisson random variables; continuous random variables, transformation theorem, simulating continuous random variables; exponential random variable, normal random variable, sums of random variables, central limit theorem. Elements of Markov chains, and introduction to Poisson processes.

Precludes additional credit for STAT 2655 and STAT 3502.

Prerequisite(s): MATH 1007 or MATH 1004 or MATH 1002 (no longer offered) or MATH 1052, and MATH 1104 or MATH 1107 or MATH 1102 (no longer offered) or MATH 1152. Restricted to students in Bachelor of Computer Science and Bachelor of Mathematics in Computer Mathematics.

Lectures three hours a week, tutorial one hour a week.

STAT 2655 [0.5 credit]**Introduction to Probability with Applications (Honours)**

Probability axioms, basic combinatorial analysis, conditional probability and independence, discrete and continuous random variables, joint and conditional distributions, expectation and moments, probability and moment generating functions, Chebyshev's inequality and weak law of large numbers, central limit theorem, sampling distributions, simulation and applications to descriptive statistics.

Precludes additional credit for STAT 2605.

Prerequisite(s): MATH 2052 with a grade of C+ or higher or MATH 2007 or MATH 1005 with a grade of B+ or higher; and MATH 2152 with a grade of C+ or higher or MATH 2107 with a grade of B+ or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 2660 [0.5 credit]**Mathematics for Finance (Honours)**

Interest rates, growth of money, discount functions, yield rates, time value of money, annuities, cash flows and portfolios, loans, mortgages, bonds, immunization, swaps, hedging and investment strategies, stocks and financial markets, arbitrage.

Prerequisite(s): i) one of MATH 2052 or MATH 2007 or MATH 1005, grade of C+ or higher; and ii) one of MATH 1152 or MATH 1107 or MATH 1104, grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 2907 [0.5 credit]**Directed Studies (Honours)**

Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3502 [0.5 credit]**Probability and Statistics**

Axioms of probability; conditional probability and independence; random variables; distributions: binomial, Poisson, hypergeometric, normal, gamma; central limit theorem; sampling distributions; point estimation: maximum likelihood, method of moments; confidence intervals; testing of hypotheses: one and two populations; engineering applications: acceptance sampling, control charts, reliability.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, STAT 2507, STAT 2605, STAT 2601, and STAT 2606.

Prerequisite(s): MATH 2004 and enrolment in the Faculty of Engineering or B.Sc. programs of the Department of Physics [except Double Honours Mathematics and Physics].

Lectures three hours a week and one hour laboratory.

STAT 3503 [0.5 credit]**Regression Analysis**

Review of simple and multiple regression with matrices, Gauss-Markov theorem, polynomial regression, indicator variables, residual analysis, weighted least squares, variable selection techniques, nonlinear regression, correlation analysis and autocorrelation. Computer packages are used for statistical analyses.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 3553.

Prerequisite(s): i) STAT 2509 or STAT 2602 or STAT 2607 or ECON 2202 or ECON 2220 or equivalent; and ii) MATH 1152 or MATH 1107 or MATH 1119 or equivalent; or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3504 [0.5 credit]**Analysis of Variance and Experimental Design**

Single and multifactor analysis of variance, orthogonal contrasts and multiple comparisons, analysis of covariance; nested, crossed and repeated measures designs; completely randomized, randomized block, Latin squares, factorial experiments, related topics. Computer packages are used for statistical analyses.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 4504.

Prerequisite(s): STAT 3503 or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3506 [0.5 credit]**Stochastic Processes and Applications (Honours)**

Conditional probability and conditional expectation; Stochastic modeling; discrete time Markov chains including classification of states, stationary and limiting distributions; exponential distribution and the Poisson processes; queueing models; applications to computer systems, operations research and social sciences.

Prerequisite(s): STAT 2655 with a grade of C- or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3507 [0.5 credit]**Sampling Methodology**

The sample survey as a vehicle for information collection in government, business, scientific and social agencies. Topics include: planning a survey, questionnaire design, simple random, stratified, systematic and cluster sampling designs, estimation methods, problem of non-response, related topics.

Includes: Experiential Learning Activity

Prerequisite(s): one of: STAT 2507, STAT 2509, STAT 2601, STAT 2602, STAT 2606, STAT 2607, ECON 2201, ECON 2202, ECON 2210, ECON 2220, or equivalent; or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3508 [0.5 credit]**Elements of Probability Theory**

Discrete and continuous distributions, moment-generating functions, marginal and conditional distributions, transformation theory, limiting distributions.

Precludes additional credit for STAT 3558 and STAT 3608.

Prerequisite(s): i) MATH 2008 (or MATH 2004 or MATH 2009); and ii) one of STAT 2507, STAT 2601, STAT 2606, ECON 2200, or ECON 2201 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3509 [0.5 credit]**Mathematical Statistics**

Point and interval estimation, sufficient statistics, hypothesis testing, chi-square tests with enumeration data. Precludes additional credit for STAT 3559.

Prerequisite(s): STAT 3508 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3553 [0.5 credit]**Regression Modeling (Honours)**

Linear regression - theory, methods and application(s). Normal distribution theory. Hypothesis tests and confidence intervals. Model selection. Model diagnostics. Introduction to weighted least squares and generalized linear models.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 3503.

Prerequisite(s): i) STAT 2559 with a grade of C- or higher, or STAT 2509 with a grade of B or higher; and ii) a grade of C- or higher in MATH 1152 or MATH 1107 or MATH 1104; or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 3558 [0.5 credit]**Elements of Probability Theory (Honours)**

Random variables and moment-generating functions, concepts of conditioning and correlation; laws of large numbers, central limit theorem; multivariate normal distribution; distributions of functions of random variables, sampling distributions, order statistics.

Precludes additional credit for STAT 3508 and STAT 3608.

Prerequisite(s): i) STAT 2655 with a grade of C- or higher; and ii) MATH 2000 with a grade of C- or higher, or (a grade of C+ or higher in MATH 2008 or MATH 2004, and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3559 [0.5 credit]**Mathematical Statistics (Honours)**

Empirical distribution functions, Monte Carlo methods, elements of decision theory, point estimation, interval estimation, tests of hypotheses, robustness, nonparametric methods.

Precludes additional credit for STAT 3509.

Prerequisite(s): STAT 3558 with a grade of C- or higher; or (STAT 3508 with a grade of B or higher, and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3660 [0.5 credit]**Actuarial Mathematics I**

Severity, frequency models, loss models, risk measures, value at risk, stochastic processes, Poisson process, characteristics of actuarial models, creating new univariate distributions, heavy-tailed distributions, mixed distributions, coverage modifications.

Prerequisite(s): STAT 2655, or permission from the school.

Lectures three hours a week, tutorial one hour a week.

STAT 3661 [0.5 credit]**Life Contingent Risk Modelling I**

Introduction to life insurance; traditional and modern insurance contracts; underwriting; premiums; present value random variable; force of mortality; life tables; insurance benefits; annuities; premium calculation, reserves.

Prerequisite(s): STAT 2660 and STAT 3660, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3907 [0.5 credit]**Directed Studies**

Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

STAT 4500 [0.5 credit]**Parametric Estimation (Honours)**

Preliminaries on probability theory; exact and asymptotic sampling distributions; unbiasedness, consistency, efficiency, sufficiency and completeness; properties of maximum likelihood estimators; least squares estimation of location and scale parameters based on order statistics and sample quantiles; Best Asymptotically Normal (BAN) estimators.

Prerequisite(s): STAT 3559 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5600, for which additional credit is precluded.

Lectures three hours a week.

STAT 4501 [0.5 credit]**Probability Theory (Honours)**

Introduction to probability, characteristic functions, probability distributions, limit theorems.

Prerequisite(s): STAT 3506 and STAT 3558 or permission of the School.

Lectures three hours a week.

STAT 4502 [0.5 credit]**Survey Sampling (Honours)**

Basic concepts in sampling from finite populations; simple random sampling; stratified sampling; choice of sampling unit; cluster and systematic sampling; introduction to multistage sampling; ratio estimation; sampling with unequal probabilities and with replacement; replicated sampling; related topics.

Prerequisite(s): i) STAT 2559 or STAT 2509; and ii) either STAT 3559, or a grade of C + or better in STAT 3509; or permission of the School.

Lectures three hours a week.

STAT 4503 [0.5 credit]**Applied Multivariate Analysis (Honours)**

Selected topics in regression and correlation non-linear models. Multivariate statistical methods, principal components, factor analysis, multivariate analysis of variance, discriminant analysis, canonical correlation, analysis of categorical data.

Prerequisite(s): STAT 3553 or (STAT 3509 and STAT 3503) or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5509, for which additional credit is precluded.

Lectures three hours a week.

STAT 4504 [0.5 credit]**Statistical Design and Analysis of Experiments (Honours)**

An extension of the designs discussed in STAT 2559 to include analysis of the completely randomized design, designs with more than one blocking variable, incomplete block designs, fractional factorial designs, multiple comparisons; and response surface methods.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 3504 and ECON 4706. PSYC 3000 is precluded for additional credit for students registered in a Mathematics program.

Prerequisite(s): STAT 3553 or STAT 3503; or permission of the School of Mathematics and Statistics.

Lectures three hours a week, laboratory one hour a week.

STAT 4506 [0.5 credit]**Nonparametric Statistics (Honours)**

Order statistics; projections; U-statistics; L-estimators; rank, sign, and permutation test statistics; nonparametric tests of goodness-of-fit, homogeneity, symmetry, and independence; nonparametric density estimation; nonparametric regression analysis: kernel estimators, orthogonal series estimators, smoothing splines; high-dimensional inference and false discovery.

Prerequisite(s): STAT 3559 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5516, for which additional credit is precluded.

Lectures three hours a week.

STAT 4507 [0.5 credit]**Statistical Inference (Honours)**

Sufficient statistics, simple and composite hypotheses, most powerful and similar region test, distribution-free tests, confidence intervals, goodness-of-fit and likelihood ratio tests, large sample theory, Bayesian and likelihood methods, sequential tests.

Prerequisite(s): STAT 4500 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5501, for which additional credit is precluded.

Lectures three hours a week.

STAT 4508 [0.5 credit]**Stochastic Models (Honours)**

Review of discrete Markov chains and Poisson processes; continuous time Markov chains; pure jump Markov processes, and birth and death processes including the Q-matrix approach; the Kolmogorov equations; renewal theory; introduction to Brownian motion; queueing theory.

Prerequisite(s): STAT 3506 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5701, for which additional credit is precluded.

Lectures three hours a week.

STAT 4509 [0.5 credit]**Advanced Mathematical Modeling (Honours)**

Real-life situations in the physical, social, and life sciences are often modeled using mathematical tools. This course will examine various models and techniques used in their analysis, e.g., matrix procedures in connection with population models. Students will use a computer package to obtain numerical results.

Prerequisite(s): i) MATH 2454 and STAT 2655 (or MATH 2404 and STAT 2605) and ii) STAT 3506; or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5601, for which additional credit is precluded.

Lectures three hours a week.

STAT 4555 [0.5 credit]**Monte Carlo Simulation (Honours)**

Basic ideas and algorithms of Monte Carlo; simulation of basic stochastic processes. Brownian motion and the Poisson process, applications to financial modelling, queueing theory. Output analysis; variance reduction. Markov chain Monte Carlo methods; Gibbs sampling, simulated annealing and Metropolis-Hastings samplers with applications.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 3555 (no longer offered).

Prerequisite(s): STAT 3558, or a grade of B or higher in STAT 3508, or permission of the School.

Lectures three hours a week, tutorial/laboratory one hour a week.

STAT 4601 [0.5 credit]**Data Mining I (Honours)**

Data visualization; knowledge discovery in datasets; unsupervised learning: clustering algorithms; dimension reduction; supervised learning: pattern recognition, smoothing techniques, classification. Computer software will be used.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 3553 or STAT 3503 or MATH 3806, or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 4603 [0.5 credit]**Time Series and Forecasting (Honours)**

Time series regression. Nonstationary and stationary time series models. Nonseasonal and seasonal time series models. ARIMA (Box-Jenkins) models. Smoothing methods. Parameter estimation, model identification, diagnostic checking. Forecasting techniques. A statistical software package will be used.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 3553 or STAT 3503, or permission of the School.

Lectures three hours a week.

STAT 4604 [0.5 credit]**Statistical Computing (Honours)**

Statistical computing techniques, pseudo-random number generation, tests for randomness, numerical algorithms in statistics; optimization techniques; environments for data analysis, efficient programming techniques; statistics with mainstream software.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 3553 or STAT 3503 or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 4607 [0.5 credit]**Bayesian Statistical Analysis (Honours)**

Probability basics for Bayesian statistics. Bayesian inference for simple exponential families. Markov Chain Monte Carlo for posterior inference. Empirical Bayes. Hierarchical Bayes. Bayesian inference for the multivariate normal model. Bayesian linear regression. More advanced topics may be included. Computer software will be used. Includes: Experiential Learning Activity
Prerequisite(s): STAT 3553 or permission of the School.
Lectures three hours a week, laboratory one hour a week.

STAT 4660 [0.5 credit]**Actuarial Mathematics II**

Empirical models, complete data, grouped data, credibility theory, failure time, accuracy, kernel estimation, goodness of fit tests, Bayesian analysis, inference for loss models, frequentist estimation, model selection.
Prerequisite(s): STAT 3660 with C+ or higher, or permission of the school.
Lectures three hours a week, tutorial one hour a week.

STAT 4661 [0.5 credit]**Life Contingent Risk Modelling II**

Policy values; multiple state models; formulae for probability; Markov multiple state models; pension mathematics; yield curves; interest rate risk; emerging costs for life insurance; equity linked insurance; deterministic and stochastic pricing; reserving, participating, and universal life insurance.
Precludes additional credit for STAT 3662 (no longer offered).
Prerequisite(s): STAT 3661 with a grade of C+ or higher; or permission of the School.
Lectures three hours a week, tutorial one hour a week.

STAT 4905 [0.5 credit]**Honours Project (Honours)**

Consists of a written report on some approved topic or topics in the field of statistics, together with a short lecture on the report.
Includes: Experiential Learning Activity
Prerequisite(s): B.Math.(Honours) students only.

STAT 4907 [0.5 credit]**Directed Studies (Honours)**

Prerequisite(s): B.Math.(Honours) students only.

Media Production and Design

This section presents the requirements for programs in:

- Media Production and Design B.M.P.D. Honours

Program Requirements**Media Production and Design****B.M.P.D. Honours (20.0 credits)****A. Credits Included in the Major (12.0 credits)**

1. 2.0 credits in:	2.0
ITEC 1005 [0.5]	Web Development
ITEC 1100 [0.5]	Introduction to Interactive Media Design

MPAD 1001 [0.5]	Introduction to Storytelling: The Context
MPAD 1002 [0.5]	Introduction to Storytelling: The Practice
2. 1.0 credits in:	1.0
ITEC 1401 [0.5] & ITEC 2401 [0.5]	Introduction to Scripting and Problem Solving Intermediate Scripting
Or	
ITEC 1400 [0.5] & ITEC 2400 [0.5]	Introduction to Programming and Problem Solving Intermediate Programming
3. 3.0 credits in:	3.0
ITEC 2100 [0.5]	Data Visualization
MPAD 2001 [0.5]	Basics of Visual Communication I
MPAD 2002 [0.5]	Basics of Visual Communication II
MPAD 2003 [0.5]	Introductory Data Storytelling
MPAD 2004 [0.5]	Writing for Media
MPAD 2501 [0.5]	Media Law
4. 3.0 credits in:	3.0
ITEC 3100 [0.5]	Immersive Storytelling
MPAD 3001 [0.5]	Storytelling and Social Media
MPAD 3002 [0.5]	Civic Engagement and Public Institutions I
MPAD 3003 [0.5]	Civic Engagement and Public Institutions II: Minor Design Project
MPAD 3300 [0.5]	Media Ethics in a Digital World
MPAD 3501 [0.5]	Internet and Big Data Law
5. 2.0 credits in:	2.0
MPAD 4000 [1.0]	Capstone Project
MPAD 4001 [0.5]	Media Industries Now and Next
MPAD 4200 [0.5]	Freelance Media Survival Skills
6. 0.5 credit from:	0.5
MPAD 3000 [0.5]	Directed Studies
MPAD 4300 [0.5]	Special Topic
MPAD 4400 [0.5]	Directed Studies
MPAD 4500 [0.5]	Special Topic
MPAD 4501 [0.5]	Gender, Identity and Inequality
MPAD 4502 [0.5]	Journalism and Conflict
MPAD 4503 [0.5]	Journalism, Indigenous Peoples and Canada
MPAD 4504 [0.5]	The Media and International Development
7. 0.5 credit from:	0.5
ITEC 4012 [0.5]	Web Application Frameworks
ITEC 4014 [0.5]	User Experience Design and Accessibility
ITEC 4015 [0.5]	Digital Audio and Music
ITEC 4016 [0.5]	Virtual and Augmented Reality
ITEC 4019 [0.5]	Directing and Cinematography for Digital Storytelling
8. 0.5 credit from:	0.5
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
INDG 2011 [0.5]	Contemporary Indigenous Studies
INDG 2012 [0.5]	Anishinaabe Studies
INDG 2013 [0.5]	Haudenosaunee Studies

INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality	
INDG 2709 [0.5]	Indigenous Drama	
INDG 3001 [0.5]	Indigenous Governance	
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy	
B. Credits Not Included in the Major (7.5 credits)		
9. 7.5 credits in free electives		7.5
Total Credits		20.0

Bachelor of Media Production and Design Regulations

In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

0000-Level Courses

Students in the B.M.P.D. program may not count any 0000-level courses for credit toward their degree. Such students may, however, be required to take one or more of these courses to replace missing program prerequisites in which case the courses will be set aside as “no credit for degree” (NCD).

Academic Continuation Evaluation for Bachelor of Media Production and Design (Honours)

Students in the B.M.P.D. (Honours) follow the continuation requirements for Honours programs, as described in Section 3.2.6 of the *Academic Regulations of the University*, with the following addition:

- Students with 15.5 or more program credits completed, but who have a Major CGPA less than 6.00, will be required to leave the B.M.P.D. program with the decision *Required to Withdraw for Two Terms* (WT).

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study.

Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work

terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager

9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Media Production and Design: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the Bachelor of Media Production and Design program;
2. Successfully completed MPAD 2002 before beginning the first work term.
3. Obtained and maintained an overall CGPA of 9.00 or higher.

Bachelor of Media Production and Design students must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Course: MPAD 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	*W/S	Winter	S	Winter	S
Summer		Summer		Summer	*W/S	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Media Production and Design (B.M.P.D. Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

The six 4U or M courses must include English and one of Advanced Functions, or Calculus and Vectors, or Mathematics of Data Management. Advanced Functions is recommended. Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those assessed to be appropriate for the program.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Media Production and Design program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market

(and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Information Technology (ITEC) Courses

ITEC 1005 [0.5 credit]

Web Development

Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid HTML5, cascading style sheets (CSS3), JavaScript and XML structures.

Precludes additional credit for IMD 1005.

Lectures and tutorials five hours a week.

ITEC 1100 [0.5 credit]

Introduction to Interactive Media Design

Introduction to interactive multimedia and design, focused on the production and processes of animation, visual fx, game design and development, web design and development, and user experience/interfaces.

Topics include: mark-up languages, design process/problem-solving tools, human-centered design, product development, ethics, and copyright and intellectual property.

Precludes additional credit for IMD 1000.

Prerequisite(s): For students not enrolled in CSIT programs.

Lectures three hours a week.

ITEC 1400 [0.5 credit]

Introduction to Programming and Problem Solving

Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1401.

Lectures/tutorials six hours a week.

ITEC 1401 [0.5 credit]

Introduction to Scripting and Problem Solving

Introduction to basic concepts of object-oriented scripting and algorithm design in Python. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, arrays, tuples, lists, debugging, algorithms and pseudocode, computer architecture, operating systems, and libraries.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1400.

Lectures/tutorials six hours a week.

ITEC 2000 [0.5 credit]**Multimedia Data Management**

Issues involving the back-end organization of information focusing on databases and database design, server-side scripting, the structured query language (SQL), digital rights management, and watermarking.

Precludes additional credit for BIT 2008, COMP 2006 (no longer offered), IRM 2000 (no longer offered), IMD 2000 (no longer offered).

Prerequisite(s): ITEC 1400 or ITEC1401 and ITEC 1005 or BIT 1400 and IMD 1005 or IRM 1005.

Lectures and tutorials five hours a week.

ITEC 2100 [0.5 credit]**Data Visualization**

Web-based data visualization techniques and systems.

Good design practices for visualization, tools for visualization of data from a variety of fields, and programming of interactive web-based visualizations focusing on JavaScript, CSS, SVG and the D3 library.

Includes: Experiential Learning Activity

Prerequisite(s): ITEC 2000 or BIT 2008.

Lectures/labs five hours a week.

ITEC 2400 [0.5 credit]**Intermediate Programming**

Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2401.

Prerequisite(s): ITEC 1400.

Lectures three hours a week, tutorial three hours a week.

ITEC 2401 [0.5 credit]**Intermediate Scripting**

Introduction to advanced object-oriented scripting and algorithm design in Python. Topics include class design and encapsulation, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists, sorting, and searching.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2400.

Prerequisite(s): ITEC 1401.

Lectures/tutorials six hours a week.

ITEC 3100 [0.5 credit]**Immersive Storytelling**

The craft of digital storytelling, creating compelling online and game-engine packages. Using a variety of narrative formats, interactive tools, and digital content, including blogs and RSS feeds, developing an in-depth story using leading edge technologies and techniques.

Includes: Experiential Learning Activity

Workshop three hours a week.

ITEC 4007 [0.5 credit]**Dynamics and Physics-Based Animation**

This course deals with the essentials of physics-based animations and dynamics; topics include basics of animation mechanics, collision detection, particle systems, and dynamic systems (cloth, fluid, and hair).

Includes: Experiential Learning Activity

Precludes additional credit for IMD 4007 (no longer offered).

Prerequisite(s): IMD 3002 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4009 [0.5 credit]**Rigging and Advanced Character Animation**

This course covers the elements of rigging and advanced character animation; topics include the basics of forwards/inverse kinematics, controls, and weighting, essentials of human and creature rigging, retargeting, face and body motion capture, and motion studies for advanced keyframe animation.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3002 and IMD 3900 or equivalent.

Lectures three hours a week, tutorial two hours a week.

ITEC 4010 [0.5 credit]**Visual Effects and Compositing**

This course covers the essentials of Visual FX and compositing, topics include camera setups (motion control systems), set issues, match-moving, image-based lighting, chroma-keying and object extraction, colour correction, 2D tracking, and rotoscoping.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3002 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4011 [0.5 credit]**Artificial Intelligence for Digital Media**

This course covers the basics of artificial intelligence in games and animation, including behaviour and crowd systems (e.g. boids, reciprocal velocity obstacles, social forces, agent-based modelling, cellular automata), path finding and route planning, as well as procedural animation systems.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400 or ITEC 2401 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4012 [0.5 credit]**Web Application Frameworks**

A detailed look at web application frameworks, focusing client and server-side frameworks that enable more advanced user interactions, including configuration, understanding functionality, and develop with them effectively.

Includes: Experiential Learning Activity

Prerequisite(s): ITEC 1005 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4014 [0.5 credit]**User Experience Design and Accessibility**

User experience (UX) of interactive systems, including product and service design, usability and UX research. Emphasis on accessibility, with topics including creating accessible systems for users with a range of abilities, accessibility standards, and validation of designs in a practical context.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3004 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4015 [0.5 credit]**Digital Audio and Music**

Introduces the concepts of digital audio & music specifically how it relates to digital media (games, film, mobile, etc). Topics include, digital audio recording, multitrack production and mixing, foley effects, musical interference and intonations, signal processing for effect, time & spatial variations, and studio recording.

Includes: Experiential Learning Activity

Studio five hours a week.

ITEC 4016 [0.5 credit]**Virtual and Augmented Reality**

Design, development, and evaluation of virtual and augmented reality systems. Topics include VR/AR history, applications, hardware (display and input devices), software, interaction techniques for navigation, selection, manipulation, human factors, and empirical validation. Projects will use modern 3D game engines and VR/AR devices.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2006 and IMD 3002 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4017 [0.5 credit]**Photo and Non-Photo-Realistic Rendering**

This course deals with physically-based rendering methods and techniques in the global illumination field; topics include the rendering equation, ray and path tracing, radiosity rendering, photon mapping, final gather methods, materials and shaders, as well taking a look at non-photo-realistic rendering.

Includes: Experiential Learning Activity

Lecture three hours a week, tutorial two hours a week.

ITEC 4018 [0.5 credit]**GPU Programming and Real-Time Rendering**

This course deals with the programming of the Graphics Processing Unit (GPU); topics include real-time rendering, shaders, and other advanced programming techniques that utilise single-instruction / multiple thread parallel processing units.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4019 [0.5 credit]**Directing and Cinematography for Digital Storytelling**

This course covers the basics of being a director in a digital storytelling environment, including the basics of direction, dealing with actors, following scripts, and dealing with elements of cinematography; including lighting, cameras, shade, and shadow.

Includes: Experiential Learning Activity

Lecture three hours a week, tutorial two hours a week.

ITEC 4020 [0.5 credit]**Environment and Architectural Modelling**

The course deals with the creation, development, and use of assets for digital environments; with specific focus on the workflows associated with scene construction and architectural modelling for a variety of real-time and non-real-time systems.

Includes: Experiential Learning Activity

Studio five hours a week.

Media Production and Design (MPAD) Courses**MPAD 1001 [0.5 credit]****Introduction to Storytelling: The Context**

Theories, origins and evolution of story within society as the digital age shapes the way we construct and consume narratives. How stories are conceived through words, sound and images, and how they resonate with and influence audiences.

Lectures three hours a week.

MPAD 1002 [0.5 credit]**Introduction to Storytelling: The Practice**

Finding and telling stories in engaging ways using text and basic images. Assignments build basic skills in research, interviewing, writing, storytelling, editing and ethics. How to structure and pitch for publication.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1001.

Workshop three hours a week.

MPAD 2001 [0.5 credit]**Basics of Visual Communication I**

Introduction to visual storytelling through video. Students develop editorial and technical skills to produce video stories that include scripting to images. Students will also learn the basics of video shooting on a range of equipment as well as basic video editing skills.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1002.

Workshop three hours a week.

MPAD 2002 [0.5 credit]**Basics of Visual Communication II**

This course expands from video theory and practice to still photography and multimedia projects, with emphasis on hands-on work with a theoretical underpinning, giving students the practical and technical skills to tell stories in multiple formats.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2001.

Workshop three hours a week.

MPAD 2003 [0.5 credit]**Introductory Data Storytelling**

Governments use data for tracking. Numbers guide public policy and can become powerful and important stories. Students will gain a theoretical understanding of the promise and pitfalls of data availability alongside the practical skills needed for powerful data-based storytelling.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1002.

Workshop three hours a week.

MPAD 2004 [0.5 credit]**Writing for Media**

This course tests student baseline skills, then develops writing capabilities tailored to specific media formats. Coursework is based on the principle that the best way to improve technique is through regular writing and timely constructive critiques.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1002.

Workshop three hours a week.

MPAD 2501 [0.5 credit]**Media Law**

A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as COMS 2501, JOUR 2501.

Prerequisite(s): Second-year standing in the Bachelor of Media Production and Design program.

Lectures three hours a week.

MPAD 3000 [0.5 credit]**Directed Studies**

Directed Studies on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.

Unscheduled.

MPAD 3001 [0.5 credit]**Storytelling and Social Media**

Social media in storytelling. Theory-based lectures, hands-on course modules, discussions and presentations.

Students will learn tactics to apply social media for research, gathering information, finding contacts and promoting their own work.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2004.

Lecture three hours a week.

MPAD 3002 [0.5 credit]**Civic Engagement and Public Institutions I**

Expert sources from Canadian institutions discuss covering the economy, justice, environment and security. How public policy is made, the role of the public and how the media analyze information, develop ideas, and produce stories.

Prerequisite(s): third-year standing in the Bachelor of Media Production and Design or the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.

Lectures three hours a week.

MPAD 3003 [0.5 credit]**Civic Engagement and Public Institutions II: Minor Design Project**

Group work building on the fall term course. Production of a public institutions mini-project involving the various development stages that will be employed in the final year capstone project, including the creation of a detailed design document to guide group projects.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 3002.

Workshop three hours a week.

MPAD 3300 [0.5 credit]**Media Ethics in a Digital World**

An examination of ethical issues relating to production of news and other forms of information content, particularly as they relate to digital environments. Discussion of various approaches to ethical decision-making, application in contemporary settings.

Also listed as JOUR 3300.

Prerequisite(s): MPAD 2501.

Lectures three hours a week.

MPAD 3501 [0.5 credit]**Internet and Big Data Law**

The legal use of big data to create content and analyze information. Who owns data; privacy and security implications within a legal landscape fraught with legal concerns and policy challenges.

Prerequisite(s): JOUR 2501 or MPAD 2501 and third-year standing in the Bachelor of Media Production and Design or in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.

Lectures three hours a week.

MPAD 3600 [0.5 credit]**Special Topic**

Examination of a topic in storytelling and media not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Media Production and Design program.

Lecture three hours a week.

MPAD 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2002.

MPAD 4000 [1.0 credit]**Capstone Project**

Student groups develop a capstone project beginning with story development and planning, completion of a story design document including project description, research, key vistas and sketches or storyboards. Group presentations leading to final media project at the end of second term.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2002, MPAD 3003, ITEC 2100, ITEC 2400 and fourth-year standing in the Bachelor of Media Production and Design program.

MPAD 4001 [0.5 credit]**Media Industries Now and Next**

Changes in the media, the public's relationship with the media and how journalists, news organizations and other media players respond. Practical issues and challenges in the professional life of an information producer.

Also listed as JOUR 4001.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Lectures and discussions three hours a week.

MPAD 4200 [0.5 credit]**Freelance Media Survival Skills**

Preparation for freelancing to publications and production houses. Resumes, finding potential buyers, interviews, establishing and marketing an individual as a business, accounting and management and dealing with taxes and benefits. Pitching stories, ideas and services.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Lectures three hours a week.

MPAD 4300 [0.5 credit]**Special Topic**

Students will choose a topic from a list of journalism options, to be announced each year.

Also listed as JOUR 4300.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4400 [0.5 credit]**Directed Studies**

Directed study on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.

Unscheduled.

MPAD 4500 [0.5 credit]**Special Topic**

Examination of a topic in storytelling and media not covered in depth in other courses.

Also listed as JOUR 4500.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4501 [0.5 credit]**Gender, Identity and Inequality**

How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis. Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.

Includes: Experiential Learning Activity

Also listed as JOUR 4501.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4502 [0.5 credit]**Journalism and Conflict**

For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.

Includes: Experiential Learning Activity

Also listed as JOUR 4502.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4503 [0.5 credit]**Journalism, Indigenous Peoples and Canada**

Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous people in the era of reconciliation.

Includes: Experiential Learning Activity

Also listed as JOUR 4503.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4504 [0.5 credit]**The Media and International Development**

A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda.

Includes: Experiential Learning Activity

Also listed as JOUR 4504.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

Medieval and Early Modern Studies (Minor)

This section presents the requirements for programs in:

- Minor in Medieval and Early Modern Studies

Program Requirements

Minor in Medieval and Early Modern Studies (4.0 credits)

This minor is available to all undergraduate degree students.

Requirements:

1. 1.0 credit in:	1.0
MEMS 2001 [0.5] Discovering the Medieval and Early & MEMS 3001 [0.5] Modern Past Researching the Medieval and Early Modern Past	
2. 2.0 credits from Approved Medieval and Early Modern Studies Electives at the 2000-level or higher, with the exception of 1.0 credit in approved language training which may be at the 1000-level or higher.	2.0
3. 1.0 credit from Approved Medieval and Early Modern Studies Electives at the 3000-level or higher.	1.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	

Total Credits **4.0**

Notes:

1. Courses used to fulfil **Items 2 and 3** above must be from more than one unit.
2. Other courses may be substituted for the credits specified in **Items 2 and 3**, when material on Medieval and Early Modern topics are central to the course. Such substitutions must be individually approved by the program coordinator, through the College of the Humanities. Students are encouraged to consult course descriptions of Special Topics courses in the related academic units.

Approved Medieval and Early Modern Studies Electives

Note: access to these courses is not guaranteed, and may depend upon space availability and the satisfaction of other requirements such as course prerequisites.

Architecture

ARCH 4305 [0.5]	Medieval Architecture
ARCH 4306 [0.5]	Renaissance Theory
ARCH 4307 [0.5]	Muslim Architecture

Art History

ARTH 2202 [0.5]	Medieval Architecture and Art
ARTH 2300 [0.5]	Italian Renaissance Art
ARTH 4202 [0.5]	Topics in Medieval Architecture and Art
ARTH 4305 [0.5]	Topics in Renaissance Art

English

ENGL 2105 [0.5]	History of the English Language
ENGL 2301 [0.5]	Literatures and Cultures 500-1500
ENGL 2302 [0.5]	Literatures and Cultures 1500-1700
ENGL 3105 [0.5]	History of Literary Theory
ENGL 3200 [0.5]	Topics in Medieval Literature
ENGL 3202 [0.5]	Chaucer
ENGL 3305 [0.5]	Shakespeare and the Stage
ENGL 3306 [0.5]	Shakespeare and Film
ENGL 4105 [0.5]	Old English
ENGL 4208 [0.5]	Studies in Medieval Literature

ENGL 4301 [0.5] Studies in Renaissance Literature

French

FREN 3212 [0.5] Des manuscrits aux belles-lettres : de la littérature médiévale à l'humanisme

Greek and Roman Studies

CLCV 2905/ Rome of the Caesars

HIST 2905 [0.5]

LATN 1005 [0.5] Introduction to Latin I

LATN 1006 [0.5] Introduction to Latin II

LATN 2200 [0.5] Intermediate Latin I

LATN 2201 [0.5] Intermediate Latin II

LATN 3900 [0.5] Advanced Latin I

LATN 3901 [0.5] Advanced Latin II

LATN 4900 [0.5] Directed Study

LATN 4901 [0.5] Directed Study

History

HIST 2000 [1.0] Medieval Europe

HIST 2204 [0.5] Early Modern Europe 1350-1650

HIST 3005 [0.5] Medieval Aristocratic Life

HIST 3006 [0.5] Medieval Religious Life

HIST 3007 [0.5] Medieval Intellectual Life

HIST 3105 [0.5] Renaissance Europe

HIST 3708 [0.5] Reformation Europe

HIST 4006 [1.0] Seminar in Medieval History

HIST 4100 [1.0] Seminar in Early Modern European History

Humanities

HUMS 2000 [1.0] Reason and Revelation

HUMS 2101 [0.5] Art from Antiquity to the Medieval World

HUMS 3000 [1.0] Culture and Imagination

HUMS 3200 [1.0] European Literature

Political Science

PSCI 3709 [0.5] Ancient and Medieval Political Thought

Religion

RELI 2310 [0.5] Islam

RELI 2330 [0.5] The Qur'an

RELI 2350 [0.5] Classical Islamic Thought

RELI 3220/ Reformation Europe

HIST 3708 [0.5]

RELI 3232 [0.5] Christian Discipline

RELI 3340 [0.5] The Life and Image of Muhammad

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Medieval and Early Modern Studies (MEMS) Courses

MEMS 2001 [0.5 credit]

Discovering the Medieval and Early Modern Past

An introduction to the Late Antique, Medieval and Early Modern worlds. Organized thematically, students will be introduced to interdisciplinary exploration of core topics. Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

MEMS 3001 [0.5 credit]

Researching the Medieval and Early Modern Past

Continued interdisciplinary study of the Late Antique, Medieval and Early Modern worlds, with a focus on how to develop a deeper analysis of the core topics examined in MEMS 2001.

Prerequisite(s): MEMS 2001, or permission of the Program Coordinator.

Lectures three hours a week.

Music

This section presents the requirements for programs in:

- Music B.Mus. Honours
- Music B.A. Honours
- Music B.A. Combined Honours
- Music B.A.
- Minor in Music
- Certificate in Carillon Studies

Program Requirements

Course Categories for Music Programs

Music History and Musicology

MUSI 1000 [0.5]	Introduction to the Study of Music
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 1002 [0.5]	Issues in Popular Music
MUSI 2005 [0.5]	Introduction to Jazz History
MUSI 2006 [0.5]	Popular Musics before 1945
MUSI 2007 [0.5]	Popular Musics after 1945
MUSI 2008 [0.5]	Music of the World's Peoples
MUSI 2009 [0.5]	Music of Asia
MUSI 2102 [0.5]	Music in an Age of Spectacle, Commerce, and Colonization
MUSI 2103 [0.5]	Music in an Age of Order, Invention, and Revolution
MUSI 3103 [0.5]	Music in Canada
MUSI 3104 [0.5]	Popular Musics of Canada
MUSI 3106 [0.5]	Popular Musics of the World
MUSI 3108 [0.5]	Musics of the Middle East and North Africa
MUSI 3301 [0.5]	Music and Religion
MUSI 3302 [0.5]	Music and Gender I
MUSI 3400 [0.5]	A History of Opera before 1800
MUSI 3401 [0.5]	A History of Opera from 1800 to 1945
MUSI 3402 [0.5]	Film Music
MUSI 3403 [0.5]	Music Industries

MUSI 3405 [0.5]	Musical Theatre
MUSI 3406 [0.5]	Instrumental Music: Music for Orchestra
MUSI 3407 [0.5]	Instrumental Music: Chamber Music
MUSI 4005 [0.5]	Issues in Jazz Studies
MUSI 4006 [0.5]	Issues in the Study of Popular Music
MUSI 4007 [0.5]	The Composer in Context
MUSI 4102 [0.5]	Ethnomusicology in Theory and Practice
MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada
MUSI 4104 [0.5]	First Peoples Music in Canada
MUSI 4105 [0.5]	Study of Musics in Africa
MUSI 4303 [0.5]	Music and Gender II
MUSI 4304 [0.5]	Music and Globalization
MUSI 4306 [0.5]	Music and Wellbeing in a Global Context
MUSI 4908 [1.0]	Honours Essay in Musicology
Theory and Composition	
MUSI 1107 [0.5]	Elementary Materials of Music
MUSI 1700 [0.5]	Theoretical Studies: Foundations of Music Theory
MUSI 1701 [0.5]	Theoretical Studies: Common Practice I
MUSI 1710 [0.5]	Theoretical Studies: Aural Training I
MUSI 1711 [0.5]	Theoretical Studies: Applied Rhythmic Training I
MUSI 2601 [0.5]	Orchestration and Instrumentation
MUSI 2602 [0.5]	Composition I
MUSI 2608 [0.5]	Computer Music I: Fundamentals of Electronic Music Production
MUSI 2609 [0.5]	Computer Music II: Production, Collaboration and Performance
MUSI 2700 [0.5]	Theoretical Studies: Common Practice II
MUSI 2701 [0.5]	Theoretical Studies: Popular Music Practice
MUSI 2703 [0.5]	Theoretical Studies VI: Practical Keyboard Skills
MUSI 2710 [0.5]	Theoretical Studies: Aural Training II
MUSI 2711 [0.5]	Theoretical Studies: Applied Rhythmic Training II
MUSI 3602 [0.5]	Composition II
MUSI 3700 [0.5]	Theoretical Studies: Seminar in Theory and Analysis
MUSI 3701 [0.5]	Theoretical Studies: Jazz Styles and Structures
MUSI 4602 [0.5]	Composition III
MUSI 4700 [0.5]	Theoretical Studies: Advanced Seminar in Theory and Analysis
MUSI 4701 [0.5]	Introduction to Jazz Arranging
MUSI 4704 [0.5]	Tonal Counterpoint
MUSI 4705 [0.5]	Post-Tonal Theory and Analysis
MUSI 4906 [1.0]	Honours Portfolio in Composition
Performance	
MUSI 1900 [0.5]	Performance I

MUSI 1901 [0.5]	Performance II
MUSI 2900 [0.5]	Performance III
MUSI 2901 [0.5]	Performance IV
MUSI 3900 [0.5]	Performance V
MUSI 3901 [0.5]	Performance VI

Ensemble

These courses are graded Sat/Uns.

MUSI 1912 [0.0]	Choral Ensemble I
MUSI 1913 [0.0]	Choral Ensemble II
MUSI 1914 [0.0]	Instrumental Ensemble I
MUSI 1915 [0.0]	Instrumental Ensemble II
MUSI 2912 [0.0]	Choral Ensemble III
MUSI 2913 [0.0]	Choral Ensemble IV
MUSI 2914 [0.0]	Instrumental Ensemble III
MUSI 2915 [0.0]	Instrumental Ensemble IV
MUSI 3912 [0.0]	Choral Ensemble V
MUSI 3913 [0.0]	Choral Ensemble VI
MUSI 3914 [0.0]	Instrumental Ensemble V
MUSI 3915 [0.0]	Instrumental Ensemble VI
MUSI 4912 [0.0]	Choral Ensemble VII
MUSI 4913 [0.0]	Choral Ensemble VIII
MUSI 4914 [0.0]	Instrumental Ensemble VII
MUSI 4915 [0.0]	Instrumental Ensemble VIII

Practicum Courses

MUSI 4800 [0.5]	Practicum in Music
MUSI 4801 [0.5]	Practicum in Music

Special Topics

MUSI 3200 [0.5]	Special Topics
MUSI 3201 [0.5]	Special Topics
MUSI 3205 [0.5]	Specialized Studies
MUSI 3206 [0.5]	Specialized Studies in Performance
MUSI 3604 [0.5]	Computer Music Projects
MUSI 4200 [0.5]	Special Topics
MUSI 4201 [0.5]	Special Topics
MUSI 4205 [0.5]	Specialized Studies
MUSI 4206 [0.5]	Specialized Studies in Performance
MUSI 4209 [1.0]	Specialized Studies

Prohibited and Restricted Courses

Performance courses are open only to students in the B.Mus. program. All ensemble (choir, jazz, early music, Indian classical music, chamber music, etc.) courses are open (without credit) to members of the public.

Music

B.Mus. Honours (20.0 credits)

A. Credits Included in the Major CGPA (14.5 credits)

1. Performance: 3.0 credits in:	3.0
MUSI 1900 [0.5]	Performance I
MUSI 1901 [0.5]	Performance II
MUSI 2900 [0.5]	Performance III
MUSI 2901 [0.5]	Performance IV
MUSI 3900 [0.5]	Performance V
MUSI 3901 [0.5]	Performance VI
2. Music Theory:	
a. 4.0 credits in:	4.0
MUSI 1700 [0.5]	Theoretical Studies: Foundations of Music Theory

MUSI 1701 [0.5]	Theoretical Studies: Common Practice I
MUSI 1710 [0.5]	Theoretical Studies: Aural Training I
MUSI 1711 [0.5]	Theoretical Studies: Applied Rhythmic Training I
MUSI 2700 [0.5]	Theoretical Studies: Common Practice II
MUSI 2701 [0.5]	Theoretical Studies: Popular Music Practice
MUSI 2710 [0.5]	Theoretical Studies: Aural Training II
MUSI 2711 [0.5]	Theoretical Studies: Applied Rhythmic Training II

b. 0.5 credit from: 0.5

MUSI 3700 [0.5]	Theoretical Studies: Seminar in Theory and Analysis
MUSI 3701 [0.5]	Theoretical Studies: Jazz Styles and Structures
MUSI 4700 [0.5]	Theoretical Studies: Advanced Seminar in Theory and Analysis
MUSI 4701 [0.5]	Introduction to Jazz Arranging
MUSI 4704 [0.5]	Tonal Counterpoint
MUSI 4705 [0.5]	Post-Tonal Theory and Analysis

3. Music History and Musicology:

a. 2.0 credits in: 2.0

MUSI 1000 [0.5]	Introduction to the Study of Music
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 1002 [0.5]	Issues in Popular Music
MUSI 2008 [0.5]	Music of the World's Peoples

b. 0.5 credit in Music History and Musicology at the 2000-level 0.5

c. 0.5 credit from one of the following Canadian music courses: 0.5

MUSI 3103 [0.5]	Music in Canada
MUSI 3104 [0.5]	Popular Musics of Canada
MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada
MUSI 4104 [0.5]	First Peoples Music in Canada

d. 0.5 credit in Music History and Musicology at the 3000-level 0.5

4. 3.5 credits in MUSI, satisfying: 3.5

a. 1.0 credit in MUSI at the 2000-level	
b. 1.0 credit in MUSI at the 3000-level	
c. 1.5 credit in MUSI at the 4000-level	

B. Credits Not Included in the Major CGPA (5.5 credits)

5. 3.0 credits not in MUSI, not cross-listed with MUSI	3.0
6. 2.5 credits in free electives	2.5

C. Additional Non-Credit Requirements

7. Satisfactory performance in one full year (two consecutive terms) of Choir. It is strongly recommended that students fulfil this requirement by participating in MUSI 1912 and MUSI 1913 in their first year of B.Mus study.

8. Satisfactory performance in six further Ensemble courses, which may be fulfilled by further choir participation or by some other ensemble (see list in Course Categories, above).

Total Credits 20.0

Music

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 1.5 credits from:	1.5
MUSI 1000 [0.5]	Introduction to the Study of Music
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 1002 [0.5]	Issues in Popular Music
MUSI 2008 [0.5]	Music of the World's Peoples
2. 0.5 credit in Music History and Musicology at the 2000-level	0.5
3. 1.0 credit in Music History and Musicology at the 3000-level	1.0
4. 2.0 credits in MUSI at the 2000-level	2.0
5. 2.0 credits in MUSI at the 3000-level	2.0
6. 2.0 credits in MUSI at the 4000-level	2.0
7. 1.0 credit in MUSI	1.0

B. Credits Not Included in the Major CGPA (10.0 credits)

8. 8.0 credits in electives not in MUSI	8.0
9. 2.0 credits in free electives	2.0
Total Credits	20.0

Music

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.5 credits from:	1.5
MUSI 1000 [0.5]	Introduction to the Study of Music
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 1002 [0.5]	Issues in Popular Music
MUSI 2008 [0.5]	Music of the World's Peoples
2. 1.5 credits in MUSI at the 2000-level	1.5
3. 2.0 credits in MUSI at the 3000-level	2.0
4. 1.0 credit in MUSI at the 4000-level	1.0
5. 1.0 credit in MUSI	1.0
B. Additional Requirements (13.0 credits)	13.0
6. The requirements from the other discipline must be satisfied	
7. Sufficient free electives to make 20.0 credits total for the program	
Total Credits	20.0

Music

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (7.0 credits)

1. 1.5 credits from:	1.5
MUSI 1000 [0.5]	Introduction to the Study of Music
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 1002 [0.5]	Issues in Popular Music
MUSI 2008 [0.5]	Music of the World's Peoples
2. 0.5 credit in Music History and Musicology at the 2000-level	0.5
3. 2.0 credits in MUSI at the 2000-level	2.0
4. 2.0 credits in MUSI at the 3000-level	2.0
5. 1.0 credit in Music	1.0

B. Credits Not Included in the Major CGPA (8.0 credits)

6. 6.0 credits in electives not in MUSI	7.0
7. 2.0 credit in free electives	1.0

Total Credits **15.0**

Minor in Music (4.0 credits)

Open to all undergraduate degree students not in Music programs.

Requirements

1. 1.0 credit from:	1.0
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 1002 [0.5]	Issues in Popular Music
MUSI 2008 [0.5]	Music of the World's Peoples
2. 1.0 credit in MUSI at the 2000-level	1.0
3. 1.0 credit in MUSI at the 3000-level	1.0
4. 1.0 credit in MUSI	1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied.	

Total Credits **4.0**

Certificate in Carillon Studies (4.0 credits)

While the Certificate in Carillon Studies may be completed as an independent, stand-alone certificate, all courses taken in completion of the curriculum outlined above may be applied for credit toward the Bachelor of Music or B.A. Music degrees, should a certificate student opt to apply for acceptance to one of these programs. Since the courses are transferable in this way, it will also be possible for students currently enrolled in one of Carleton's undergraduate Music programs to concurrently complete the Certificate in Carillon Studies.

Successful completion requires grades of C or higher in all courses.

Year One (2.0 credits)

Requirements

1. 1.0 credit in Performance Studies:	1.0
MUSI 1900 [0.5]	Performance I
MUSI 1901 [0.5]	Performance II
2. 0.5 credit from:	0.5
MUSI 1000 [0.5]	Introduction to the Study of Music
MUSI 1001 [0.5]	A History of Western Classical Music: Medieval to the Present
MUSI 1710 [0.5]	Theoretical Studies: Aural Training I
3. 0.5 credit from:	0.5
MUSI 4200 [0.5]	Special Topics
MUSI 4800 [0.5]	Practicum in Music
Music elective as approved by both the Dominion Carillonneur and the Supervisor of Performance Studies	

Year Two (2.0 credits)

Requirements

1. 1.0 credit in Performance Studies:	1.0
MUSI 2900 [0.5]	Performance III
MUSI 2901 [0.5]	Performance IV
2. 0.5 credit from:	0.5
MUSI 3103 [0.5]	Music in Canada
MUSI 3104 [0.5]	Popular Musics of Canada

MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada	
MUSI 4104 [0.5]	First Peoples Music in Canada	
MUSI 2602 [0.5]	Composition I	
3. 0.5 credit from:		0.5
MUSI 4201 [0.5]	Special Topics	
MUSI 4801 [0.5]	Practicum in Music	
Music elective as approved by both the Dominion Carillonneur and the Supervisor of Performance Studies		
Total Credits		4.0

Regulations

In addition to the program requirements described here, students must satisfy the University regulations (see the *Academic Regulations of the University* section of this calendar).

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies,

French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and

B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take

careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Academic Continuation Evaluation for Bachelor of Music

Students in the Bachelor of Music (Honours) follow the continuation requirements for Honours programs, as described in Section 3.2.6 of the *Academic Regulations of the University*, with the following additions and amendments:

- Students with 15.5 or more program credits completed, but who have a Major CGPA less than 6.00, will be required to leave the B. Music program with the decision *Continue in Alternate* (CA).
- The Bachelor of Music defines a Performance Core consisting of the following courses:

MUSI 1900 [0.5]	Performance I
MUSI 1901 [0.5]	Performance II
MUSI 2900 [0.5]	Performance III
MUSI 2901 [0.5]	Performance IV
MUSI 3900 [0.5]	Performance V
MUSI 3901 [0.5]	Performance VI

- Bachelor of Music students who fail to obtain a grade of B- or higher in any two consecutive performance courses at the 2000- and/or 3000-level, or in any two consecutive attempts at the same 2000- and/or 3000-level performance course, in credits 5.5 to 15.0 must leave the program with the status *Continue in Alternate* (CA).

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions

website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;

2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite

averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.Mus. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. Although it is not an admission requirement, a 4U course in English is recommended.

Note: An audition is required; for more information on the audition, consult admissions.carleton.ca.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those courses assessed as being appropriate for the program selected.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

To be eligible for admission to the Certificate in Carillon Studies, applicants must have:

- Successful audition (a minimum piano proficiency level equivalent to Royal Conservatory of Music Grade 9 is expected);
- Grade II Theory Rudiments, Royal Conservatory of Music (or equivalent);

- Approval of the relevant SSAC/Music Associate Performance Instructor (normally the Dominion Carillonneur);
- Approval of the Music Program.

Music (MUSI) Courses

Note: the majority of courses are open to non-Majors; students are advised to consult the Discipline. Priority is given to Music students.

MUSI 1000 [0.5 credit]

Introduction to the Study of Music

Introduction to issues and methods in the study of music. Development of writing and research skills; methodological approaches in all academic areas of music (historical musicology, ethnomusicology, popular music studies, music theory).

Prerequisite(s): first-year enrolment in the B.Mus., B.A. Music or B.A. Hons. Music program.

Lectures three hours a week.

MUSI 1001 [0.5 credit]

A History of Western Classical Music: Medieval to the Present

Western classical music from the medieval period to the present. Major historical periods (Medieval, Renaissance, Baroque, Classical, Romantic, Modern, Postmodern) are examined through representative music ranging from Gregorian chant to contemporary experimental trends. Lectures three hours a week.

MUSI 1002 [0.5 credit]

Issues in Popular Music

History of world popular music from the 19th century until the present. Topics may include the growth of the music industry, the impact of technology, stardom, world music, the role of the press, copyright, censorship, and sexuality. Lectures three hours a week.

MUSI 1003 [0.5 credit]

Understanding Music

Through musical examples drawn from diverse cultures and historical periods, students develop the ability to describe and analyze different aspects of music and deepen their appreciation of music as a cultural experience. No credit for students in B.Mus, B.A. Honours Music or B.A. Music.

Lectures three hours a week.

MUSI 1107 [0.5 credit]

Elementary Materials of Music

An introduction to the rudiments of music and aural training. Successful completion of this course will fulfil the prerequisite for entry into MUSI 1700. Not available to B.Mus. students for credit.

Lectures three hours a week.

MUSI 1700 [0.5 credit]**Theoretical Studies: Foundations of Music Theory**

An introduction to the organizational principles underlying tonal music including intervals, scales, rhythm, metre, chords, counterpoint, form, cadences, and harmonic progressions.

Prerequisite(s): permission of the Discipline.

Lectures three hours a week.

MUSI 1701 [0.5 credit]**Theoretical Studies: Common Practice I**

A study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period, with emphasis on the development of analytical and written skills of diatonic music.

Prerequisite(s): MUSI 1700 or permission of the Discipline.

Lectures three hours a week.

MUSI 1710 [0.5 credit]**Theoretical Studies: Aural Training I**

A study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Discipline.

Lectures three hours a week.

MUSI 1711 [0.5 credit]**Theoretical Studies: Applied Rhythmic Training I**

A study of the rhythm of selected classical, popular, and world musics, with emphasis on applied performance, movement, and dictation.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Discipline.

Lectures and workshops three hours a week.

MUSI 1900 [0.5 credit]**Performance I**

Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction.

Includes: Experiential Learning Activity

Prerequisite(s): audition and enrolment in the B.Mus. program; first-year standing or permission of the Discipline.

MUSI 1901 [0.5 credit]**Performance II**

Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1900 and enrolment in the B.Mus. program; first-year standing or permission of the Discipline.

MUSI 1912 [0.0 credit]**Choral Ensemble I**

Participation in a choral ensemble, by arrangement with the Supervisor of Performance and Practical Studies.

Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1913 [0.0 credit]**Choral Ensemble II**

A continuation of MUSI 1912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1914 [0.0 credit]**Instrumental Ensemble I**

Participation in an instrumental ensemble, by arrangement with the Supervisor of Performance and Practical Studies.

Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1915 [0.0 credit]**Instrumental Ensemble II**

A continuation of MUSI 1914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2005 [0.5 credit]**Introduction to Jazz History**

A survey of ragtime and jazz from their roots in pre-twentieth-century black music and white music to contemporary jazz idioms, including an examination of New Orleans jazz and Dixieland, swing, bebop, cool jazz, and free jazz.

Precludes additional credit for MUSI 2205.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2006 [0.5 credit]**Popular Musics before 1945**

Selected aspects of the development of Anglo-American popular musics from their roots in the nineteenth century until the shifts and tensions which led to the advent of rock-and-roll and soul in the 1950s. Genres to be examined include blues, country, the sentimental ballad, Broadway music.

Precludes additional credit for MUSI 2203, MUSI 2206, MUSI 2208.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2007 [0.5 credit]**Popular Musics after 1945**

Selected aspects of the development of Anglo-American and world popular musics from the advent of rock 'n' roll and soul to the present. Early rock 'n' roll, British rhythm 'n' blues, Motown, West Coast music, punk, heavy metal, new wave, disco and country.

Precludes additional credit for MUSI 2207, MUSI 2208, MUSI 2209.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2008 [0.5 credit]**Music of the World's Peoples**

A survey of musical traditions from various regions of the world, with an emphasis on the sociocultural contexts in which those musics are created and performed.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 2300.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2009 [0.5 credit]**Music of Asia**

A comparative and analytical study of music in Asia, including India, China, Korea, Indonesia, Japan, and the Arabic world, through an examination of the music, musical instruments and theoretical systems.

Precludes additional credit for MUSI 2301.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2102 [0.5 credit]**Music in an Age of Spectacle, Commerce, and Colonization**

The Baroque (1600-1750) was simultaneously shaped by absolutist regimes, competing religions, and an emerging public sphere. Music and culture from Monteverdi to Bach and Handel are investigated in the contexts of power, (geo)politics, religion, aesthetics, gender, socio-economics, dissemination, genre, and compositional practices.

Precludes additional credit for MUSI 2001.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2103 [0.5 credit]**Music in an Age of Order, Invention, and Revolution**

Peace and revolution, faith and secularism, noble privilege and bourgeois commerce: fundamental contradictions underlying the creative work of Mozart, Haydn, and Beethoven. This course studies their compositions—operas, sacred works, symphonies, chamber music—within the political, social and cultural institutions of their times (ca. 1730-1815).

Precludes additional credit for MUSI 2002.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2601 [0.5 credit]**Orchestration and Instrumentation**

Introduction to the fundamentals of effective and professional arranging. All aspects of the various instruments of the orchestra and matters having to do with the practicalities of orchestration for both small and large ensembles, and accepted professional standards of score presentation.

Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.

Lecture three hours a week.

MUSI 2602 [0.5 credit]**Composition I**

Introduction to theories and technicalities involved in original creative writing through the preparation of individual assignments; based in the practice of recent music in the Western Classical tradition while allowing for the music of other Western styles and traditions to be addressed.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor. MUSI 2601 is recommended.

Lectures and workshops three hours a week.

MUSI 2605 [0.5 credit]**Choral Conducting**

Introduction to the special stylistic features of choral music from the Renaissance to the present as well as to a variety of practical techniques (vocal production, gesture, conducting patterns, diction, etc.).

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.

Lectures three hours a week.

MUSI 2608 [0.5 credit]**Computer Music I: Fundamentals of Electronic Music Production**

Introduction to the theory and practice of electronic music creation, focusing on audio editing, synthesis, sampling, beat-making, signal processing, and sound design, using a variety of professional-grade software packages.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 2603 (no longer offered).

Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 2609 [0.5 credit]**Computer Music II: Production, Collaboration and Performance**

Computer-based music-making with an emphasis on collaborative approaches and performance-oriented tools and techniques. Introduces practices of remixing, live sound manipulation, preparation of original material for performance, and the use of hardware controllers in live performance and real-time musical collaboration using mobile technologies.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 2603 (no longer offered).

Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 2700 [0.5 credit]**Theoretical Studies: Common Practice II**

A continuation of the study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period and early twentieth century, with emphasis on chromaticism and the development of analytical and written skills.

Prerequisite(s): MUSI 1701 or permission of the instructor.

Lectures three hours a week.

MUSI 2701 [0.5 credit]**Theoretical Studies: Popular Music Practice**

A study of the rhythmic, melodic, harmonic and formal structures of popular musics.

Prerequisite(s): MUSI 1700 or permission of the instructor.

Lectures three hours a week.

MUSI 2703 [0.5 credit]**Theoretical Studies VI: Practical Keyboard Skills**

A practical study of rhythm, harmony and melody on the keyboard, with an emphasis on vocal and instrumental accompaniment and the development of improvisation skills in a variety of styles.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.

Labs three hours a week.

MUSI 2710 [0.5 credit]**Theoretical Studies: Aural Training II**

A continuation of the study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1701, MUSI 1710.

Lectures three hours a week.

MUSI 2711 [0.5 credit]**Theoretical Studies: Applied Rhythmic Training II**

A continuation of the study of the rhythm of common-practice and world musics, with emphasis on applied performance, movement, and dictation.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1700, MUSI 1711.

Lectures and workshops three hours per week.

MUSI 2900 [0.5 credit]**Performance III**

A continuation of MUSI 1901.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and MUSI 1901 with a C+ or higher, or permission of the Discipline.

MUSI 2901 [0.5 credit]**Performance IV**

A continuation of MUSI 2900.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and MUSI 2900 with a B- or higher, or permission of the Discipline.

MUSI 2912 [0.0 credit]**Choral Ensemble III**

A continuation of MUSI 1913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2913 [0.0 credit]**Choral Ensemble IV**

A continuation of MUSI 2912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2914 [0.0 credit]**Instrumental Ensemble III**

A continuation of MUSI 1915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week through either the fall or winter term, and participation in concerts.

MUSI 2915 [0.0 credit]**Instrumental Ensemble IV**

A continuation of MUSI 2914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3103 [0.5 credit]**Music in Canada**

Through an examination of many genres and styles including classical, folk, popular, and jazz, this course explores the ways that music participates in shaping complex and often conflicting ideas about nation, place, and identity in Canada.

Precludes additional credit for MUSI 3100 (no longer offered).

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3104 [0.5 credit]**Popular Musics of Canada**

A survey of popular musics in Canada from early colonial times to the present. The course will consider a wide range of musical styles and genres, along with related cultural and historical issues.

Precludes additional credit for MUSI 3100.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3106 [0.5 credit]**Popular Musics of the World**

Through a series of case studies, this course examines the impacts of globalization, colonialism and media in music-making and consumption of popular music practices found around the world.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3107 [0.5 credit]**Classical Indian Music**

An introduction to the history and theory of classical Indian music including ragas, instruments, rhythm and improvisation.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing, or permission of the instructor.

Lectures three hours a week.

MUSI 3108 [0.5 credit]**Musics of the Middle East and North Africa**

An examination of various musics, devotional traditions, and shifting cultural and art movements in the region, resulting from processes of globalization, political change, and technological innovation. Course sessions will include close and critical discussion of selected texts, audio-visual examples, and ethnomusicological documentary films.

Prerequisite(s): second-year standing.

Seminars three hours a week.

MUSI 3200 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 3201 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 3205 [0.5 credit]**Specialized Studies**

Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year.

Prerequisite(s): permission of the department, and a minimum GPA of 9.0 in Music.

Individual instruction.

MUSI 3206 [0.5 credit]**Specialized Studies in Performance**

Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year.

Prerequisite(s): permission of the Department, and a minimum CGPA of 9.0 in Music.

Individual instruction.

MUSI 3301 [0.5 credit]**Music and Religion**

An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people's worldviews, identities, and experiences within and outside of their communities.

Also listed as RELI 3301.

Prerequisite(s): second-year standing.

Seminars three hours a week.

MUSI 3302 [0.5 credit]**Music and Gender I**

The role of gender in the theory and practice of music in western and non-western cultures.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3303 [0.5 credit]**Introduction to Music Therapy**

Literature, practice and theory of music therapy. The use of music (improvisation, the voice, and reception) with various populations, including children and adults with special needs, people in long term care, people with neurological disorders, and in palliative care.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures three hours a week.

MUSI 3400 [0.5 credit]**A History of Opera before 1800**

A survey of the development of opera from the beginnings to about 1800. The major monuments of Italian, French, German and English opera, by such composers as Monteverdi, Cavalli, Scarlatti, Purcell, Lully, Gluck, Rameau, Mozart and Haydn.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3401 [0.5 credit]**A History of Opera from 1800 to 1945**

A study of romantic and contemporary opera through an examination of selected works from Weber's *Der Freischütz* to Britten's *Peter Grimes*, including an investigation of national styles from Wagnerian music drama and Italian verismo to Russian realism and German expressionism.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3402 [0.5 credit]**Film Music**

The use of music in film, from the silent era to the present day, studying the techniques, styles and theory of film music through the examination of selected scenes.

Also listed as FILM 3402.

Prerequisite(s): second-year standing.

Lectures three hours a week, screening two hours a week.

MUSI 3403 [0.5 credit]**Music Industries**

An introduction to the structure and history of the music industries.

Also listed as COMS 3404.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3405 [0.5 credit]**Musical Theatre**

A survey of the styles, works, and artists of the musical theatre genre as well as the artistic elements that comprise musical theatre.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3406 [0.5 credit]**Instrumental Music: Music for Orchestra**

Origins and development of orchestral music from its beginnings as an independent form in the 18th century to the present. Major symphonies and symphonic poems by composers like Haydn, Beethoven, Liszt, Brahms, Strauss, and Shostakovich. Brief examination of concerto and ballet music.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3407 [0.5 credit]**Instrumental Music: Chamber Music**

History of chamber music and the cultural contexts within which it rose to prominence in Europe and North America in the 18th, 19th and 20th centuries. Genres by representative composers including the sonata, duos, trios, quartets, quintets, sextets, divertimenti, and works for small chamber orchestra.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3408 [0.5 credit]**Music in an Age of Passion, Imagination, and Iconoclasm**

This course examines European art music of the nineteenth century, a revolutionary period of socio-political change when inspiration, subjectivity, radical idealism, expressive intensity, cultural nationalism, and the primacy of the individual creative voice were held up as primary aesthetic ideals.

Prerequisite(s): Third-year standing or permission of the instructor.

Seminars three hours a week.

MUSI 3409 [0.5 credit]**Music in an Age of Tumult, Innovation, and Pluralism**

A study of western art music of the 20th century. Musical works, compositional techniques and performance practices are examined in the context of musical innovation, social change, political upheaval, and stylistic pluralism in a rapidly changing "modern" world.

Prerequisite(s): Third-year standing or permission of the instructor.

Seminars three hours a week.

MUSI 3602 [0.5 credit]**Composition II**

Designed to enable students to develop abilities in the writing of original music. The study and appreciation of modern and contemporary styles and techniques are encouraged.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 3600 (no longer offered).

Prerequisite(s): MUSI 2601, MUSI 2602, and MUSI 2700, or permission of the instructor.

Lectures, workshops, and individual consultations three hours a week.

MUSI 3603 [0.5 credit]**Computer Music Techniques**

An introduction to the techniques of sound synthesis primarily through practical experience at the digital synthesizer and computer. The basics of machine operations, software and computer applications to composition and synthesis. Enrolment is limited.

Includes: Experiential Learning Activity

Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing and either MUSI 2608 or MUSI 2609, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 3604 [0.5 credit]**Computer Music Projects**

Examination of the various applications of digital equipment through the realization of original projects. Students may focus on studio composition, software development or analytic research. Appropriate compositional techniques and problem solving strategies are also discussed. Enrolment is limited.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing, and either MUSI 2603 (no longer offered) or MUSI 2608 or MUSI 2609, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 3605 [0.5 credit]**Instrumental Conducting**

Introduction to the practice of conducting Instrumental music from the Classical era to the present as well as to a variety of practical techniques (rehearsal techniques, gesture, conducting patterns, score study, etc.).

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.

MUSI 3606 [0.5 credit]**Live Sound**

Theoretical, practical and technical requirements of audio production in live settings are explored through lectures, demonstrations and workshops. Students develop skills in critical listening, pre-production planning, microphone selection and placement, signal routing, audio processing, monitoring and mixing for live event venues. Prior experience not required.

Includes: Experiential Learning Activity

Lectures and workshops three hours a week.

MUSI 3700 [0.5 credit]**Theoretical Studies: Seminar in Theory and Analysis**

Selected topic in music theory. Topics will change yearly and may include: methods of music analysis, analysis of selected works, styles and structures of common practice or post common practice period, music, modal, tonal, or post-tonal counterpoint, history of music theory.

Precludes additional credit for MUSI 3500.

Prerequisite(s): MUSI 2700 or permission of the instructor. Seminars three hours a week.

MUSI 3701 [0.5 credit]**Theoretical Studies: Jazz Styles and Structures**

Techniques of arranging and composition for small and large ensembles will be studied through the examination of selected works drawn from the jazz repertoire. Works will be selected for stylistic and theoretical analysis, for exercises in aural recognition, and for arranging purposes.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4203 (taken in 1994-95) or MUSI 4204 (taken in 1995-96).

Prerequisite(s): MUSI 2701 or permission of the instructor. Workshops three hours a week.

MUSI 3702 [0.5 credit]**Introduction to Physics and Psychoacoustics of Music**

Basic topics in physics and psychoacoustics, with an emphasis on those concepts that are most useful for music performance, analysis, composition, and musicology.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3703 [0.5 credit]**Improvisation in Theory and Practice**

Selected forms of improvisation from diverse musical and cultural traditions. In addition to weekly seminar meetings, the class will engage in experiential forms of learning by actively improvising in a weekly performance-oriented seminar.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Discussion and performance seminars three hours a week.

MUSI 3900 [0.5 credit]**Performance V**

A continuation of MUSI 2901.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B. Mus. and MUSI 2901 with a B- or higher, or permission of the Discipline.

MUSI 3901 [0.5 credit]**Performance VI**

A continuation of MUSI 3900.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and MUSI 3900 with a B- or higher, or permission of the Discipline.

MUSI 3912 [0.0 credit]**Choral Ensemble V**

A continuation of MUSI 2913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3913 [0.0 credit]**Choral Ensemble VI**

A continuation of MUSI 3912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3914 [0.0 credit]**Instrumental Ensemble V**

A continuation of MUSI 2915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3915 [0.0 credit]**Instrumental Ensemble VI**

A continuation of MUSI 3914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4000 [0.5 credit]**Performance VII**

This is an optional performance course for B.Mus. students with high academic standing.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4900, MUSI 4901, MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus., MUSI 3901, A- or higher average in second- and third-year MUSI performance courses, and permission of the Music performance supervisor.
Individual instruction.

MUSI 4001 [0.5 credit]**Performance VIII**

This is an optional performance course for B.Mus. students with high academic standing.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4002, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901, MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus. standing, MUSI 4000 with A- or higher, and permission of the Music performance supervisor.
Individual instruction.

MUSI 4002 [0.5 credit]**Graduating Demo Recording**

A graduation recording of substantial duration arranged in consultation with the discipline. A proposal must be submitted one week before the last day for course changes. All recording costs must be borne by the student.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4001, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901 (no longer offered), MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with a grade of A- or higher, and permission of both the relevant associate music instructor and the music performance supervisor.
Individual instruction.

MUSI 4003 [0.5 credit]**Graduating Recital**

Public recital arranged in consultation with the Supervisor of Performance and Practical Studies. An outline of the program must be submitted one week before the last day for course changes.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4001, MUSI 4002, MUSI 4900, MUSI 4901, MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with A- or higher, and permission of both the relevant associate music instructor and the Music performance supervisor.
Individual instruction.

MUSI 4005 [0.5 credit]**Issues in Jazz Studies**

An examination of key issues in the study of jazz including history/historiography, gender, genre, race, politics, identity and performance.

Prerequisite(s): MUSI 2005 and third-year standing.

MUSI 4006 [0.5 credit]**Issues in the Study of Popular Music**

An introduction to current issues in the study of popular music. The course will be organized around a series of case studies.

Prerequisite(s): third-year standing, MUSI 1002, and at least one of MUSI 2005, 2006, or 2007.
Seminars three hours a week.

MUSI 4007 [0.5 credit]**The Composer in Context**

Examination of the life and music of a selected composer, and the historical, social, cultural, and political factors that shaped the context within which they worked. Focus on history, biography, musical style and analysis.

Prerequisite(s): Fourth-year standing or permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4102 [0.5 credit]**Ethnomusicology in Theory and Practice**

In this course students learn and apply research methods common to ethnomusicological research, developing an individual ethnographic project that draws on critical contemporary theories in ethnomusicology.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, or permission of the instructor.

Seminars three hours a week.

MUSI 4103 [0.5 credit]**Music, Migration and Diaspora in Canada**

Critical analyses of diversity and multiculturalism narratives in Canada and the ways that settler-colonialism influenced and continues to inform music creation and expression. Various case studies examine the diversity of musics found in Canada and the ways that music facilitates belonging and/or exclusion to community.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as MUSI 5015, for which additional credit is precluded.

Seminars three hours a week.

MUSI 4104 [0.5 credit]**First Peoples Music in Canada**

This course examines the role of Indigenous music and musicians in various contemporary issues and priorities for First Peoples in Canada, including political activism, language and cultural maintenance and revitalization, environmental justice and the land, reconciliation and decolonization.

Prerequisite(s): fourth-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as MUSI 5016, for which additional credit is precluded.

Seminars three hours a week.

MUSI 4105 [0.5 credit]**Study of Musics in Africa**

This course explores musics in Africa, engaging with issues of colonialism, ownership and copyright, politics and protest, social change, and global relationships.

Prerequisite(s): third year standing, or permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4200 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. The course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4201 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. Course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4205 [0.5 credit]**Specialized Studies**

Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year.

Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.

Individual instruction.

MUSI 4206 [0.5 credit]**Specialized Studies in Performance**

Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year.

Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.

Individual instruction.

MUSI 4209 [1.0 credit]**Specialized Studies**

A course designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. Course offerings change from year to year.

Prerequisite(s): permission of the instructor.

MUSI 4303 [0.5 credit]**Music and Gender II**

The relationship between the social and formal organization of music and the social and formal organization of sexual difference. The role of music in the social construction of gender; the role of gender in the determination of musical style and taste.

Precludes additional credit for MUSI 3303 or MUSI 4204 (taken in 1992-93).

Prerequisite(s): MUSI 3302 or permission of the instructor.

Seminars three hours a week.

MUSI 4304 [0.5 credit]**Music and Globalization**

Examining music's role in the multifaceted and complex processes of globalization. Drawing on case studies of "world musics", this course explores how sound and music negotiate histories of post/colonialism, cultural and economic imperialism, and constructions of sameness and difference in "world music" contexts.

Prerequisite(s): fourth-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as MUSI 5017, for which additional credit is precluded.

Seminars three hours a week.

MUSI 4306 [0.5 credit]**Music and Wellbeing in a Global Context**

An examination of the ways in which music contributes to mental, social and physical wellbeing throughout the world, drawing from the fields of neuroscience, medical ethnomusicology, community music and cross-cultural studies.

Prerequisite(s): fourth-year standing or permission of the instructor.

Seminar three hours a week.

MUSI 4307 [0.5 credit]**Music in an Age of Power, Plague, and Courtly Love**

The music of the "dark ages" is illuminated in the context of politics, spectacle, devotion, celebration, compositional process, manuscript culture, dissemination, musical notation, plague, and courtly love. "Medievalism" is examined as an aesthetic of the era (ca. 400-1400) and as reinterpreted in our modern world.

Prerequisite(s): Fourth-year standing or permission of the instructor.

Seminar three hours a week.

MUSI 4308 [0.5 credit]**Music in an Age of Devotion, Seduction, and Rebirth**

This course brings to life the Renaissance (1400-1600), when music played a vital role in lavish courts, grand cathedrals, and vibrant cities. Madrigals, masses, and motets are examined in the context of politics, religion, gender, manuscript and print culture, rhetoric, art, and architecture.

Prerequisite(s): Fourth-year standing or permission of the instructor.

Seminar three hours a week.

MUSI 4602 [0.5 credit]**Composition III**

A continuation of MUSI 3602, focusing on the development of creative individual approaches to music composition.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 3600 (no longer offered).

Prerequisite(s): MUSI 3602, or permission of the instructor.

Lectures, workshops, and individual consultations three hours a week.

MUSI 4700 [0.5 credit]**Theoretical Studies: Advanced Seminar in Theory and Analysis**

A study of a selected topic in music theory. Topics will change yearly and may include: methods of music analysis; analysis of selected works; styles and structures of common practice or post common practice period music; modal, tonal, or post-tonal counterpoint; history of music theory.

Prerequisite(s): MUSI 2700 or permission of the instructor. Seminars three hours a week.

MUSI 4701 [0.5 credit]**Introduction to Jazz Arranging**

The art of arranging for small and large jazz ensembles is introduced through analysis of recordings by artists such as Duke Ellington, Fletcher Henderson, Count Basie, Rob McConnell, and Maria Schneider. Topics may include 2-, 3-, and 4-voice writing in a jazz idiom.

Prerequisite(s): MUSI 3701 or permission of the instructor. Seminars three hours a week.

MUSI 4702 [0.5 credit]**Topics in Music Perception and Cognition**

Selected advanced topics in the perception and cognition of music. Where appropriate, emphasis will be placed upon areas of overlap between psychological research and issues in aesthetics and cultural theory.

Prerequisite(s): third-year standing and MUSI 3702, or permission of the department.

Seminars three hours a week.

MUSI 4704 [0.5 credit]**Tonal Counterpoint**

This course deals with the development of writing skills and knowledge of counterpoint as manifest in the Baroque era. Topics may include invention, canon, fugue, dance forms, the compositional language of J. S. Bach, and contrapuntal techniques in the late 18th century and beyond.

Prerequisite(s): MUSI 2700, or permission of the instructor. Lectures and seminars three hours a week.

MUSI 4705 [0.5 credit]**Post-Tonal Theory and Analysis**

Fundamentals of post-tonal music theory and analysis.

Neo-tonal, atonal, twelve-tone and third-stream jazz.

Students will develop the critical skills to understand these theoretical tools and be conversant with some of the aesthetic precepts associated with them.

Prerequisite(s): MUSI 2700 or permission of the instructor. Lectures and seminars three hours a week.

MUSI 4800 [0.5 credit]**Practicum in Music**

Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.

Includes: Experiential Learning Activity

Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4801 [0.5 credit]**Practicum in Music**

Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.

Includes: Experiential Learning Activity

Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B + or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4906 [1.0 credit]**Honours Portfolio in Composition**

The course requires the composition of an original work of substantial proportions, with an accompanying analytical paper. Application to the Discipline for permission to register must be received by September 1.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4600.

Prerequisite(s): fourth-year standing, MUSI 3600 and permission of the Discipline.

MUSI 4908 [1.0 credit]**Honours Essay in Musicology**

An Honours research essay of approximately 50 pages.

A written outline of the project must be submitted to the Honours committee changes by the first day of classes.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, A- or higher average, and permission of the Discipline.

MUSI 4909 [1.0 credit]**Portfolio in New Media**

The course requires the creation of an original work (or works) of substantial proportions using applications in the electronic studios. A high level of independence and originality will be required. Requests to the Discipline for permission to register must be received by September 1.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

MUSI 4912 [0.0 credit]**Choral Ensemble VII**

A continuation of MUSI 3913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4913 [0.0 credit]**Choral Ensemble VIII**

A continuation of MUSI 4912. Registration, but not participation, is restricted to students in the B. Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4914 [0.0 credit]**Instrumental Ensemble VII**

A continuation of MUSI 3915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4915 [0.0 credit]**Instrumental Ensemble VIII**

A continuation of MUSI 4914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term participation in concerts.

Nanoscience

This section presents the requirements for programs in:

- Nanoscience B.Sc. Honours

Program Requirements**Nanoscience****B.Sc. Honours (20.0 credits)****A. Credits Included in the Major CGPA (11.5 credits)**

1. 5.0 credits in:	5.0
CHEM 1001 [0.5] General Chemistry I	
CHEM 1002 [0.5] General Chemistry II	
CHEM 2103 [0.5] Physical Chemistry I	

CHEM 2501 [0.5]	Introduction to Inorganic and Bioinorganic Chemistry	
CHEM 3100 [0.5]	Physical Chemistry II	
CHEM 3107 [0.5]	Experimental Methods in Nanoscience	
CHEM 3503 [0.5]	Inorganic Chemistry I	
CHEM 3600 [0.5]	Introduction to Nanotechnology	
CHEM 4908 [1.0]	Research Project and Seminar	
2. 1.0 credit from:		1.0
CHEM 2203 [0.5]	Organic Chemistry I	
CHEM 2204 [0.5]	Organic Chemistry II	
CHEM 2302 [0.5]	Analytical Chemistry I	
CHEM 2303 [0.5]	Analytical Chemistry II	
3. 1.0 credit from:		1.0
CHEM 4103 [0.5]	Surface Chemistry and Nanostructures	
CHEM 4104 [0.5]	Physical Methods of Nanotechnology	
CHEM 4201 [0.5]	Macromolecular Nanotechnology	
4. 3.5 credits in:		3.5
ELEC 2501 [0.5]	Circuits and Signals	
ELEC 2507 [0.5]	Electronics I	
ELEC 3908 [0.5]	Physical Electronics	
ELEC 3105 [0.5]	Electromagnetic Fields	
ELEC 4609 [0.5]	Integrated Circuit Design and Fabrication	
ELEC 4700 [0.5]	The Physics and Modeling of Advanced Devices and Technologies	
ELEC 4704 [0.5]	Nanoscale Technology and Devices	
5. 1.0 credit from:		1.0
ELEC 2607 [0.5]	Switching Circuits	
ELEC 3500 [0.5]	Digital Electronics	
ELEC 3509 [0.5]	Electronics II	
ELEC 3909 [0.5]	Electromagnetic Waves	
B. Credits Not Included in the Major CGPA (8.5 credits)		
6. 2.5 credits in:		2.5
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
STAT 3502 [0.5]	Probability and Statistics	
7. 1.0 credits in:		1.0
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
8. 1.5 credits in	Advanced Science Faculty Electives:	1.5
9. 0.5 credit in	Science Continuation (not CHEM)	0.5
10. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science (or approved courses outside the faculties of Science and Engineering and Design)	
11. 1.5 credits in	approved courses outside the faculties of Science and Engineering and Design	1.5

12. 1.0 credit in free electives 1.0

Total Credits 20.0

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
- 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue (EC)* in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology

PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced

standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Neuroscience

This section presents the requirements for programs in:

- Neuroscience and Mental Health B.Sc. Honours
- Neuroscience and Mental Health B.Sc. Major
- Neuroscience and Mental Health B.Sc.
- Neuroscience and Biology B.Sc. Combined Honours
- Minor in Neuroscience and Mental Health

Program Requirements

Course Categories for B.Sc. Programs

The program descriptions for B.Sc. Combined Honours Neuroscience make use of the course categories defined for all B.Sc. programs (see Academic Regulations for the Bachelor of Science Degree):

- Science Faculty Electives
- Science Continuation Courses
- Free Electives

Neuroscience and Mental Health

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major (11.0 credits)

1. 6.0 credits in:	6.0
NEUR 1202 [0.5]	Neuroscience of Mental Health and Psychiatric Disease
NEUR 1203 [0.5]	Neuroscience of Mental Health and Neurological Disease
NEUR 2001 [0.5]	Introduction to Research Methods in Neuroscience
NEUR 2002 [0.5]	Introduction to Statistics in Neuroscience
NEUR 2004 [0.5]	Fundamentals of Scientific Writing in Neuroscience
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience
NEUR 2202 [0.5]	Neurodevelopment and Plasticity

NEUR 3001 [0.5]	Data Analysis in Neuroscience I	
NEUR 3002 [0.5]	Data Analysis in Neuroscience II	
NEUR 3204 [0.5]	Neuropharmacology	
NEUR 3206 [0.5]	Sensory and Motor Neuroscience	
NEUR 3207 [0.5]	Systems Neuroscience	
2. 1.0 credit in:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
3. 1.5 credit from:		1.5
NEUR 3301 [0.5]	Genetics of Mental Health	
NEUR 3303 [0.5]	The Neuroscience of Consciousness	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	
NEUR 3402 [0.5]	Impact of Lifestyle and Social Interactions on Mental Health	
NEUR 3403 [0.5]	Stress and Mental Health	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
4. 0.5 credit from:		0.5
NEUR 4301 [0.5]	Neurobiology of Energy Homeostasis	
NEUR 4302 [0.5]	Sex and the Brain	
NEUR 4303 [0.5]	Indigenous Health & Mental Health	
NEUR 4305 [0.5]	Immune-Brain Interactions	
NEUR 4306 [0.5]	The Neural Basis of Addiction	
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy	
5. 0.5 credit from:		0.5
NEUR 4200 [0.5]	Seminar on Current Advances in Neuroscience	
NEUR 4202 [0.5]	Seminar on Current Research in Neuroscience and Psychiatric Disease	
NEUR 4203 [0.5]	Seminar on Current Research in Neuroscience and Clinical Neurology	
6. 1.0 credit from:		1.0
NEUR 4905 [1.0]	Honours Workshop	
NEUR 4906 [1.0]	Translational Approach to Indigenous Community Wellness	
NEUR 4907 [1.0]	Honours Essay and Research Proposal	
NEUR 4908 [1.0]	Honours Research Thesis	
7. 0.5 credit in	Advanced Science Faculty Electives	0.5
B. Credits Not Included in the Major CGPA (9.0 credits)		2.0
8. 2.0 credits in:		2.0
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
PHYS 1007 [0.5]	Elementary University Physics I	
PHYS 1008 [0.5]	Elementary University Physics II	
9. 0.5 credit from:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
10. 1.0 credit in:		1.0
BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
or BIOL 2200 [0.5]	Cellular Biochemistry	

11. 1.0 credit in Science Continuation Courses	1.0
12. 2.0 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
13. 2.5 credits in free electives.	2.5
Total Credits	20.0

Neuroscience and Mental Health

B.Sc. Major (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 6.0 credits in:	6.0
NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease	
NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease	
NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience	
NEUR 2002 [0.5] Introduction to Statistics in Neuroscience	
NEUR 2004 [0.5] Fundamentals of Scientific Writing in Neuroscience	
NEUR 2201 [0.5] Cellular and Molecular Neuroscience	
NEUR 2202 [0.5] Neurodevelopment and Plasticity	
NEUR 3001 [0.5] Data Analysis in Neuroscience I	
NEUR 3002 [0.5] Data Analysis in Neuroscience II	
NEUR 3204 [0.5] Neuropharmacology	
NEUR 3206 [0.5] Sensory and Motor Neuroscience	
NEUR 3207 [0.5] Systems Neuroscience	
2. 1.0 credit in:	1.0
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
3. 1.5 credit from:	1.5
NEUR 3301 [0.5] Genetics of Mental Health	
NEUR 3303 [0.5] The Neuroscience of Consciousness	
NEUR 3304 [0.5] Hormones and Behaviour	
NEUR 3401 [0.5] Environmental Toxins and Mental Health	
NEUR 3402 [0.5] Impact of Lifestyle and Social Interactions on Mental Health	
NEUR 3403 [0.5] Stress and Mental Health	
NEUR 3501 [0.5] Neurodegeneration and Aging	
NEUR 3502 [0.5] Neurodevelopmental Determinants of Mental Health	
4. 1.0 credit from:	1.0
NEUR 4301 [0.5] Neurobiology of Energy Homeostasis	
NEUR 4302 [0.5] Sex and the Brain	
NEUR 4303 [0.5] Indigenous Health & Mental Health	
NEUR 4305 [0.5] Immune-Brain Interactions	
NEUR 4306 [0.5] The Neural Basis of Addiction	
NEUR 4600 [0.5] Advanced Lab in Neuroanatomy	
5. 1.0 credit from:	1.0
NEUR 4200 [0.5] Seminar on Current Advances in Neuroscience	
NEUR 4202 [0.5] Seminar on Current Research in Neuroscience and Psychiatric Disease	

NEUR 4203 [0.5] Seminar on Current Research in Neuroscience and Clinical Neurology	
6. 0.5 credit in Advanced Science Faculty Electives	0.5
B. Credits Not Included in the Major CGPA (9.0 credits)	
7. 2.0 credits in:	2.0
CHEM 1001 [0.5] General Chemistry I	
CHEM 1002 [0.5] General Chemistry II	
PHYS 1007 [0.5] Elementary University Physics I	
PHYS 1008 [0.5] Elementary University Physics II	
8. 0.5 credit from:	0.5
MATH 1007 [0.5] Elementary Calculus I	
MATH 1107 [0.5] Linear Algebra I	
9. 1.0 credit in:	1.0
BIOL 2107 [0.5] Fundamentals of Genetics	
BIOL 2201 [0.5] Cell Biology and Biochemistry or BIOL 2200 [0.5] Cellular Biochemistry	
10. 1.0 credit in Science Continuation courses (not in NEUR)	1.0
11. 2.0 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
12. 2.5 credits in free electives	2.5
Total Credits	20.0

Neuroscience and Mental Health

B.Sc. (15.0 credits)

A. Credits Included in the Major CGPA (7.5 credits)

1. 5.0 credits in:	5.0
NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease	
NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease	
NEUR 2001 [0.5] Introduction to Research Methods in Neuroscience	
NEUR 2002 [0.5] Introduction to Statistics in Neuroscience	
NEUR 2004 [0.5] Fundamentals of Scientific Writing in Neuroscience	
NEUR 2201 [0.5] Cellular and Molecular Neuroscience	
NEUR 2202 [0.5] Neurodevelopment and Plasticity	
NEUR 3204 [0.5] Neuropharmacology	
NEUR 3206 [0.5] Sensory and Motor Neuroscience	
NEUR 3207 [0.5] Systems Neuroscience	
2. 1.0 credit in:	1.0
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
3. 1.5 credit from:	1.5
NEUR 3301 [0.5] Genetics of Mental Health	
NEUR 3303 [0.5] The Neuroscience of Consciousness	
NEUR 3304 [0.5] Hormones and Behaviour	
NEUR 3401 [0.5] Environmental Toxins and Mental Health	
NEUR 3402 [0.5] Impact of Lifestyle and Social Interactions on Mental Health	
NEUR 3403 [0.5] Stress and Mental Health	
NEUR 3501 [0.5] Neurodegeneration and Aging	

NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
B. Credits Not Included in the Major CGPA (7.5 credits)		
4. 2.0 credits in:		2.0
CHEM 1001 [0.5]	General Chemistry I	
CHEM 1002 [0.5]	General Chemistry II	
PHYS 1007 [0.5]	Elementary University Physics I	
PHYS 1008 [0.5]	Elementary University Physics II	
5. 0.5 credit from:		0.5
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
6. 1.0 credit in:		1.0
BIOL 2107 [0.5]	Fundamentals of Genetics	
BIOL 2201 [0.5]	Cell Biology and Biochemistry	
7. 1.0 credit in Science Continuation courses (not in NEUR)		1.0
8. 2.0 credits in approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)		2.0
9. 1.0 credit in free electives		1.0
Total Credits		15.0

Neuroscience and Biology

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (14.5 credits)

1. 5.5 credits in:		5.5
NEUR 1202 [0.5]	Neuroscience of Mental Health and Psychiatric Disease	
NEUR 1203 [0.5]	Neuroscience of Mental Health and Neurological Disease	
NEUR 2001 [0.5]	Introduction to Research Methods in Neuroscience	
NEUR 2002 [0.5]	Introduction to Statistics in Neuroscience	
NEUR 2201 [0.5]	Cellular and Molecular Neuroscience	
NEUR 2202 [0.5]	Neurodevelopment and Plasticity	
NEUR 3001 [0.5]	Data Analysis in Neuroscience I	
NEUR 3002 [0.5]	Data Analysis in Neuroscience II	
NEUR 3204 [0.5]	Neuropharmacology	
NEUR 3206 [0.5]	Sensory and Motor Neuroscience	
NEUR 3207 [0.5]	Systems Neuroscience	
2. 3.0 credits in:		3.0
BIOL 1103 [0.5]	Foundations of Biology I	
BIOL 1104 [0.5]	Foundations of Biology II	
BIOL 2001 [0.5]	Animals: Form and Function	
BIOL 2104 [0.5]	Introductory Genetics	
BIOL 2200 [0.5]	Cellular Biochemistry	
BIOL 3305 [0.5]	Human and Comparative Physiology	
3. 1.5 credits in BIOL or BIOC at the 3000 level or above		1.5
4. 1.0 credit from:		1.0
NEUR 3301 [0.5]	Genetics of Mental Health	
NEUR 3303 [0.5]	The Neuroscience of Consciousness	
NEUR 3304 [0.5]	Hormones and Behaviour	
NEUR 3401 [0.5]	Environmental Toxins and Mental Health	

NEUR 3402 [0.5]	Impact of Lifestyle and Social Interactions on Mental Health	
NEUR 3403 [0.5]	Stress and Mental Health	
NEUR 3501 [0.5]	Neurodegeneration and Aging	
NEUR 3502 [0.5]	Neurodevelopmental Determinants of Mental Health	
NEUR 4301 [0.5]	Neurobiology of Energy Homeostasis	
NEUR 4302 [0.5]	Sex and the Brain	
NEUR 4303 [0.5]	Indigenous Health & Mental Health	
NEUR 4305 [0.5]	Immune-Brain Interactions	
NEUR 4306 [0.5]	The Neural Basis of Addiction	
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy	
5. 2.0 credits from:		2.0
BIOC 4007 [0.5]	Membrane Biochemistry	
BIOL 2600 [0.5]	Ecology	
BIOL 2301 [0.5]	Biotechnology I	
BIOL 2303 [0.5]	Microbiology	
BIOL 3307 [0.5]	Advanced Human Anatomy and Physiology	
BIOL 3605 [0.5]	Field Course I	
BIOL 3609 [0.5]	Evolutionary Concepts	
BIOL 3802 [0.5]	Animal Behaviour	
BIOL 3804 [0.5]	Social Evolution	
BIOL 4306 [0.5]	Animal Neurophysiology	
BIOL 4317 [0.5]	Neuroethology: The Neural Basis of Animal Behaviour	
BIOL 4802 [0.5]	Advanced Animal Behaviour	
CHEM 2204 [0.5]	Organic Chemistry II	
6. 0.5 credit from:		0.5
NEUR 4200 [0.5]	Seminar on Current Advances in Neuroscience	
NEUR 4202 [0.5]	Seminar on Current Research in Neuroscience and Psychiatric Disease	
NEUR 4203 [0.5]	Seminar on Current Research in Neuroscience and Clinical Neurology	
7. 1.0 credit from:		1.0
NEUR 4905 [1.0]	Honours Workshop	
NEUR 4907 [1.0]	Honours Essay and Research Proposal	
NEUR 4908 [1.0]	Honours Research Thesis	
BIOL 4905 [1.0]	Honours Workshop	
BIOL 4907 [1.0]	Honours Essay and Research Proposal	
BIOL 4908 [1.0]	Honours Research Thesis	
B. Credits not included in the Major CGPA (5.5 credits)		
8. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
9. 1.5 credits in:		1.5
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 2203 [0.5]	Organic Chemistry I	
10. 1.0 credit in:		1.0
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	

11. **2.0 credits** in approved courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) 2.0

Total Credits 20.0

Minor in Neuroscience and Mental Health (4.0 credits)

The Minor in Neuroscience is available to students registered in degree programs other than those offered by the Department of Neuroscience.

Requirements:

1. **2.0 credits in:** 2.0

NEUR 1202 [0.5] Neuroscience of Mental Health and Psychiatric Disease

NEUR 1203 [0.5] Neuroscience of Mental Health and Neurological Disease

NEUR 2201 [0.5] Cellular and Molecular Neuroscience

NEUR 2202 [0.5] Neurodevelopment and Plasticity

2. **2.0 credits from:** 2.0

NEUR 3204 [0.5] Neuropharmacology

NEUR 3301 [0.5] Genetics of Mental Health

NEUR 3303 [0.5] The Neuroscience of Consciousness

NEUR 3304 [0.5] Hormones and Behaviour

NEUR 3401 [0.5] Environmental Toxins and Mental Health

NEUR 3402 [0.5] Impact of Lifestyle and Social Interactions on Mental Health

NEUR 3403 [0.5] Stress and Mental Health

NEUR 3501 [0.5] Neurodegeneration and Aging

NEUR 3502 [0.5] Neurodevelopmental Determinants of Mental Health

NEUR 4301 [0.5] Neurobiology of Energy Homeostasis

NEUR 4302 [0.5] Sex and the Brain

NEUR 4303 [0.5] Indigenous Health & Mental Health

NEUR 4306 [0.5] The Neural Basis of Addiction

Total Credits 4.0

Students enrolled in the Neuroscience and Mental Health programs should consult with the Department of Neuroscience when planning their program or selecting courses. Those enrolled in the Neuroscience Combined Honours program should consult with either the Department of Biology or the Department of Neuroscience.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double**

major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;

2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science

chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics

PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

PHYS 1007 [0.5] Elementary University Physics I

PHYS 1008 [0.5] Elementary University Physics II

PHYS 2202 [0.5] Wave Motion and Optics

PHYS 2604 [0.5] Modern Physics I

PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars

PHYS 3606 [0.5] Modern Physics II

PHYS 3608 [0.5] Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5] Global Environmental Systems

GEOG 2006 [0.5] Introduction to Quantitative Research

GEOG 2013 [0.5] Weather and Water

GEOG 2014 [0.5] The Earth's Surface

GEOG 3003 [0.5] Quantitative Geography

GEOG 3010 [0.5] Field Methods in Physical Geography

GEOG 3102 [0.5] Geomorphology

GEOG 3103 [0.5] Watershed Hydrology

GEOG 3104 [0.5] Principles of Biogeography

GEOG 3105 [0.5] Climate and Atmospheric Change

GEOG 3106 [0.5] Aquatic Science and Management

GEOG 3108 [0.5] Soil Properties

GEOG 4000 [0.5] Field Studies

GEOG 4005 [0.5] Directed Studies in Geography

GEOG 4013 [0.5] Cold Region Hydrology

GEOG 4017 [0.5] Global Biogeochemical Cycles

GEOG 4101 [0.5] Two Million Years of Environmental Change

GEOG 4103 [0.5] Water Resources Engineering

GEOG 4104 [0.5] Microclimatology

GEOG 4108 [0.5] Permafrost

Science Psychology Courses

PSYC 2001 [0.5] Introduction to Research Methods in Psychology

PSYC 2002 [0.5] Introduction to Statistics in Psychology

PSYC 2700 [0.5] Introduction to Cognitive Psychology

PSYC 3000 [1.0] Design and Analysis in Psychological Research

PSYC 3506 [0.5] Cognitive Development

PSYC 3700 [1.0] Cognition (Honours Seminar)

PSYC 3702 [0.5] Perception

PSYC 2307 [0.5] Human Neuropsychology I

PSYC 3307 [0.5] Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The

summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Neuroscience and Mental Health; B.Sc. Combined Honours Neuroscience and Biology: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;

2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Neuroscience and Mental Health and B.Sc. Combined Honours Neuroscience and Biology students must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course for Neuroscience and Mental Health: NEUR 3999

Work Term Course for Combined Honours Neuroscience and Biology: NEUR 3999, BIOL 3999

Work-Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places

available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology,

Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Neuroscience (NEUR) Courses

NEUR 1202 [0.5 credit]

Neuroscience of Mental Health and Psychiatric Disease

Clinical symptoms of psychiatric disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive and anxiety disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, and substance use disorders.

Precludes additional credit for NEUR 1201 (no longer offered).

Lecture three hours a week.

NEUR 1203 [0.5 credit]

Neuroscience of Mental Health and Neurological Disease

Clinical symptoms of neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson's disease, ALS, chronic pain, Alzheimer's disease and concussion.

Lectures three hours a week.

NEUR 2001 [0.5 credit]**Introduction to Research Methods in Neuroscience**

A general introduction to research process within neuroscience. Topics covered include research strategies, methods, and techniques; basic descriptive statistics; research communication; and responsible scientific conduct.

Precludes additional credit for PSYC 2000 and PSYC 2001.

Prerequisite(s): second-year standing.

Lecture three hours a week.

NEUR 2002 [0.5 credit]**Introduction to Statistics in Neuroscience**

A general introduction to statistical techniques employed within contemporary neuroscience. Topics covered include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square).

Precludes additional credit for ENST 2006, GEOG 2006, PSYC 2002.

Prerequisite(s): PSYC 2001 or NEUR 2001.

Lectures three hours a week, online labs/tutorials.

NEUR 2003 [0.5 credit]**Introduction to Techniques in Neuroscience**

Introduction to common techniques used in neuroscience research. Brain imaging, animal behaviour, electrophysiology, immunohistochemistry and microscopy, genomics, transgenics, cell culture, and DSM-IV-based clinical assessment.

Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.

Lectures three hours a week.

NEUR 2004 [0.5 credit]**Fundamentals of Scientific Writing in Neuroscience**

Introduction to various forms of scientific writing appropriate to neuroscience, with a focus in fundamental skills in scientific writing.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in a Neuroscience program and one of NEUR 1201, NEUR 1202 or NEUR 1203.

Lectures and workshops three hours a week.

NEUR 2201 [0.5 credit]**Cellular and Molecular Neuroscience**

Core principles in cellular and molecular neuroscience, including signal transmission along and between neurons, ion channels and transporters, intracellular signaling pathways, and regulation of gene expression.

Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered).

Prerequisite(s): Either NEUR 1201 and NEUR 1203, or NEUR 1202 and NEUR 1203, or both BIOL 1103 and BIOL 1104.

Lectures three hours a week, online labs.

NEUR 2202 [0.5 credit]**Neurodevelopment and Plasticity**

Core principles in nervous system development from embryogenesis to plasticity in the adult brain. Topics include neural induction, neurogenesis, apoptosis, neuronal migration and axon growth, synaptogenesis and synaptic pruning both under normal conditions and in psychopathology.

Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered).

Prerequisite(s): NEUR2201.

Lectures three hours a week, online labs.

NEUR 2801 [0.5 credit]**Neuroscience and Creativity**

Abnormal brain function associated with mental illness or substance abuse has been commonly depicted in or been the inspiration for important cultural works including movies, music, paintings and literature. The neurobiological basis of creativity in individuals with and without mental illness.

Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.

Lectures and seminars three hours a week.

NEUR 3001 [0.5 credit]**Data Analysis in Neuroscience I**

Introducing various software for analyzing neuroscience data. Dealing with real data, drawing graphs, application of descriptive and inferential statistics through the general linear model, assumptions of parametric tests, robust statistics, confidence intervals, correlations, use of appropriate statistical methods and interpretation of results.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001 and PSYC 2002, or NEUR 2001 and NEUR 2002.

Lectures three hours a week, online labs/workshops.

NEUR 3002 [0.5 credit]**Data Analysis in Neuroscience II**

Use of software for analyzing neuroscience data. Statistical techniques typically include nonparametric tests, t tests, and various forms of both ANOVA and regression including robust statistical tests, with a focus on the practical application of appropriate statistical methods and interpretation of results.

Includes: Experiential Learning Activity

Prerequisite(s): NEUR 3001.

Lectures three hours a week, online labs/workshops.

NEUR 3203 [0.5 credit]**Field Course in Animal Behaviour**

Offered in the Department of Biology as BIOL 3605. Only those modules dealing with animal behaviour topics may be offered for Neuroscience credit.

Includes: Experiential Learning Activity

Also listed as BIOL 3605.

Precludes additional credit for PSYC 3203.

Prerequisite(s): permission of the department.

NEUR 3204 [0.5 credit]**Neuropharmacology**

Overview of chemical neurotransmission and key neurotransmitter systems. A description of licit and illicit drugs covering topics that range from historical perspectives to pharmacology to mechanisms of action in the brain. Discussion of neurochemical basis of psychiatric diseases including anxiety, depression and schizophrenia. Precludes additional credit for PSYC 3204 (no longer offered).

Prerequisite(s): NEUR 2200 or NEUR 2201.

Lectures and seminars three hours a week.

NEUR 3206 [0.5 credit]**Sensory and Motor Neuroscience**

Exploration of major topics in sensory processing and motor control, with a focus on underlying mechanisms and neurobiological principles. Topics include all sensory systems (such as vision, somatosensation and audition) plus motor system components including lower and upper motor neurons, basal ganglia, and cerebellum.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 3200 (no longer offered), NEUR 3200 (no longer offered), PSYC 3202 (no longer offered) and NEUR 3202 (no longer offered).

Prerequisite(s): NEUR 1201 or both NEUR 1202 and NEUR 1203, and either NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week, laboratory four hours a week.

NEUR 3207 [0.5 credit]**Systems Neuroscience**

Neural systems underlying complex behaviours including emotion, motivation, and sleep, and the role of association cortices in brain function.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 3200 (no longer offered) and PSYC 3200 (no longer offered).

Prerequisite(s): NEUR 3206.

Lectures three hours a week, laboratory four hours a week.

NEUR 3301 [0.5 credit]**Genetics of Mental Health**

Most common mental health diseases have a genetic component. By focusing on specific diseases, this course will discuss how disease susceptibility genes are identified, and describe the genetic, genomic and epigenetic mechanisms through which DNA alterations can predispose to disease.

Prerequisite(s): BIOL 2104 or BIOL 2107, and NEUR 2200 or NEUR 2201.

Lectures three hours a week.

NEUR 3303 [0.5 credit]**The Neuroscience of Consciousness**

Consciousness remains one of the least understood aspects of the nervous system. This course explores neural mechanisms underlying consciousness, changes in consciousness associated with sleep, coma, vegetative states, drugs, and other stimuli, and considers the evolutionary basis of consciousness, and its relationship with awareness.

Prerequisite(s): NEUR 2200 or NEUR 2202.

Lectures three hours a week.

NEUR 3304 [0.5 credit]**Hormones and Behaviour**

The effects of hormones throughout life at all levels of the nervous system. The role of hormones in mediating behaviours that are both basic (feeding, reproduction and social interactions) and complex (motivation, emotion, learning and memory).

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3401 [0.5 credit]**Environmental Toxins and Mental Health**

Exposure to environmental toxins from the air, water or food can interfere with neuronal function, alter neurodevelopment, and damage the brain. This course will explore associations between toxins and diseases such as Parkinson's disease, multiple sclerosis and depression, focusing on mechanisms underlying development of pathology.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3402 [0.5 credit]**Impact of Lifestyle and Social Interactions on Mental Health**

Healthy lifestyle choices and positive social interactions can reduce the incidence of pathological conditions such as depression, obesity, cardiovascular disease and impaired immunity. This course focuses on psychosocial and neurobiological mechanisms that underlie the relationship between lifestyle, social interactions and health.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3403 [0.5 credit]**Stress and Mental Health**

Stressful events can have profound repercussions on physical and psychological well-being. This course examines the psychosocial and biological processes by which stressors predispose to both physical (immune-related disorders, diabetes, heart disease) and psychological (acute stress disorder, posttraumatic stress disorder, depression, anxiety) pathologies.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3501 [0.5 credit]**Neurodegeneration and Aging**

Perspectives on aging and neurodegeneration from psychosocial and neuroscience points of view. How factors including TBI, stroke and alcohol make the brain vulnerable and contribute to neurodegeneration. Clinical overview of Alzheimer's, Parkinson's, Huntington's and ALS and the underlying pathology that differentiates these diseases.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3502 [0.5 credit]**Neurodevelopmental Determinants of Mental Health**

Development of the human brain, the generation and differentiation of the various cell types, and the formation of the vast network of neural connections. How neurodevelopmental dysregulation can result in pathologies including dyslexia, ADHD, schizophrenia and autism.

Prerequisite(s): NEUR 2200, or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

NEUR 4001 [0.5 credit]**Special Topics in Neuroscience**

Each section of NEUR 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of NEUR 4001 but can register in each section only once.

Prerequisite(s): NEUR 3200, or NEUR 3204 and NEUR 3206 and NEUR 3207, or permission of the Department.

Lectures three hours a week.

NEUR 4002 [0.5 credit]**Systematic Reviews and Meta-Analyses**

Introduction to the methods used in conducting systematic reviews and meta-analyses. Topics include: conducting literature searches, extracting relevant literature, assessing quality of studies, synthesizing findings across studies, and the statistical methods used to carry out a meta-analysis.

Includes: Experiential Learning Activity

Prerequisite(s): NEUR 3002 or HLTH 3201 or BIOL 3604 or permission of instructor.

Also offered at the graduate level, with different requirements, as NEUR 5203, for which additional credit is precluded.

Lecture three hours a week.

NEUR 4003 [0.5 credit]**Knowledge Mobilization**

Knowledge mobilization concepts, tools, and frameworks, the challenges and value of translational research, and processes involved in integrated knowledge mobilization. Skills to maximize research impacts will be developed.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing in a Neuroscience program OR permission of the department.

Also offered at the graduate level, with different requirements, as NEUR 5801, for which additional credit is precluded.

Includes: Experiential Learning Activity

NEUR 4200 [0.5 credit]**Seminar on Current Advances in Neuroscience**

Headline research in neuroscience. Topics may include technical and conceptual advances, ethical issues, medical improvement, and social impacts of neuroscience research.

Precludes additional credit for PSYC 4200 (no longer offered).

Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.

Seminar three hours a week.

NEUR 4202 [0.5 credit]**Seminar on Current Research in Neuroscience and Psychiatric Disease**

Recent research in clinical neuroscience including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, substance abuse, and personality disorders.

Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.

Seminar three hours a week.

NEUR 4203 [0.5 credit]**Seminar on Current Research in Neuroscience and Clinical Neurology**

Recent research in neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson's disease, ALS, chronic pain, Alzheimer's disease and concussion.

Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.

Seminars three hours a week.

NEUR 4301 [0.5 credit]**Neurobiology of Energy Homeostasis**

Focus on neuroanatomical and molecular mechanisms underlying how mammals adapt to changes and challenges in the environment. Topics include regulation of feeding, energy expenditure, water balance, and temperature regulation.

Prerequisite(s): NEUR 3304.

Lectures three hours a week.

NEUR 4302 [0.5 credit]**Sex and the Brain**

Neurobiological processes behind reproductive behaviours in various animal species including humans. Evaluation of data concerning neurobiological differences between sexes, biological determinants of sexual orientation, and relating to neurobiology of sex disorders.

Precludes additional credit for NEUR 3302 (no longer offered).

Prerequisite(s): NEUR 3304.

Lectures three hours a week

NEUR 4303 [0.5 credit]**Indigenous Health & Mental Health**

The physical and mental health issues of Indigenous people in the context of the cultural, environmental, developmental and biological factors that contribute to comorbid conditions and greater risk and resilience.

Prerequisite(s): 3rd year standing or above.

Lectures three hours a week.

NEUR 4305 [0.5 credit]**Immune-Brain Interactions**

Communication between the brain and the immune system; messengers mediating the interaction. How disturbances of immune-brain signaling can lead to disease (multiple sclerosis, Parkinson's) and to changes in mood and cognition.

Precludes additional credit for NEUR 3305 (no longer offered).

Prerequisite(s): NEUR 3200 or NEUR 3207.

Lectures three hours a week.

NEUR 4306 [0.5 credit]**The Neural Basis of Addiction**

How substance and behavioural addictions impact neural function to ultimately lead to the neuropathology of addiction in vulnerable populations. Contemporary neurobiological theories of addiction will also be addressed.

Precludes additional credit for NEUR 3306.

Prerequisite(s): NEUR 3204.

Lecture three hours a week.

NEUR 4600 [0.5 credit]**Advanced Lab in Neuroanatomy**

Advanced experiential learning in neuroanatomy, histology and microscopy.

Includes: Experiential Learning Activity

Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207, fourth-year standing in a Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

NEUR 4801 [0.5 credit]**Neuroethics**

Ethical issues of key importance to current neurobiological research. Topics may include the use of animals in research, stem cell research, genetic diagnosis and gene therapy, neuroimaging, and the effect on identity and autonomy of manipulations such as psychopharmaceuticals and psychosurgery.

Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207.

Lectures and seminars three hours a week.

NEUR 4900 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth- year standing and permission of the Department.

NEUR 4905 [1.0 credit]**Honours Workshop**

The course will focus on active learning in areas that include written and oral communication, evaluation and interpretation of results, statistics and data management, emphasizing transferable skills that will be most appropriate for non-research career paths.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4906, NEUR 4907 and NEUR 4908.

Prerequisite(s): fourth-year standing in an Honours Neuroscience program and permission of the Department. Lectures and seminars three hours a week, and colloquia three hours a week.

NEUR 4906 [1.0 credit]**Translational Approach to Indigenous Community Wellness**

This course involves co-developing an Indigenous community-led process or product that addresses a current and specific mental health issue. Involves working in interdisciplinary groups with a community partner.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4905, NEUR 4907 and NEUR 4908.

Prerequisite(s): Fourth-year standing with a minimum Major CGPA of 9.0 and a grade of A- or higher in one of NEUR 3401, NEUR 3402 or NEUR 3403 and permission of instructor. Prior completion of NEUR 4303 recommended.

Seminars or workshops three hours a week. A field trip to the partner community is typically required.

NEUR 4907 [1.0 credit]

Honours Essay and Research Proposal

An independent essay based critical review and research proposal on a topic in neuroscience, using library resources, under the direct supervision of a Faculty advisor. Evaluation is based on a written report.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4905, NEUR 4906 and NEUR 4908.

Prerequisite(s): NEUR 3200, or both NEUR 3206 and NEUR 3207, and fourth-year standing in an Honours Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

Colloquia three hours a week.

NEUR 4908 [1.0 credit]

Honours Research Thesis

An independent research project undertaken under the direct supervision of a faculty advisor typically from the Department of Neuroscience. Evaluation is based on a written report and poster.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4905, NEUR 4906 and NEUR 4907.

Prerequisite(s): NEUR 3200, or both NEUR 3206 and NEUR 3207, and fourth-year standing in an Honours Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

Colloquia three hours a week.

Open Studies

This section presents the requirements for programs in:

- Open Studies Program Requirements B.A.
- Open Studies Program Requirements B.Sc.

Open Studies Program Requirements

B.A. (15.0 credits)

Enrolment in the B.A. Open Studies program is restricted.

Please consult with an academic advisor for more information.

1. 6.0 credits from disciplines in the Faculty of Arts and Social Sciences or the Faculty of Public Affairs	6.0
2. 9.0 credits in free electives	9.0
Total Credits	15.0

Notes:

1. Students must complete 2.0 credits at the 3000 level or above;
2. Subject to individual program restrictions, students may be eligible to declare a Minor.

In addition to the requirements presented here, students must satisfy the Bachelor of Arts regulations, including the Breadth Requirement, and University regulations common to all undergraduate students, including the Minimum Number of Carleton Credits (Residency and Advanced credits), the Maximum Number of Credits Below the 2000-level, and the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

Open Studies Program Requirements

B.Sc. (15.0 credits)

Enrolment in the B.Sc. Open Studies programs is restricted. Please consult with an academic advisor for more information.

1. 6.0 credits from disciplines in the Faculty of Science or the Faculty of Engineering and Design	6.0
2. 9.0 credits in free electives	9.0
Total Credits	15.0

Notes:

1. Students must complete 2.0 credits at the 3000 level or above;
2. Subject to individual program restrictions, students may be eligible to declare a Minor.

In addition to the requirements presented here, students must satisfy the Bachelor of Science regulations, including the Breadth and Experimental Science Requirements, and University regulations common to all undergraduate students, including the Minimum Number of Carleton Credits (Residency and Advanced credits), the Maximum Number of Credits Below the 2000-level, and the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public

Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and

B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology
Chemistry	
CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II

CHEM 2800 [0.5] Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5] Exploring Planet Earth

ERTH 1009 [0.5] The Earth System Through Time

ERTH 2102 [0.5] Mineralogy to Petrology

ERTH 2404 [0.5] Engineering Geoscience

ERTH 2802 [0.5] Field Geology I

ERTH 3111 [0.5] Vertebrate Evolution: Mammals, Reptiles, and Birds

ERTH 3112 [0.5] Vertebrate Evolution: Fish and Amphibians

ERTH 3204 [0.5] Mineral Deposits

ERTH 3205 [0.5] Physical Hydrogeology

ERTH 3806 [0.5] Structural Geology

Food Sciences

FOOD 3001 [0.5] Food Chemistry

FOOD 3002 [0.5] Food Analysis

FOOD 3005 [0.5] Food Microbiology

Geography

GEOG 1010 [0.5] Global Environmental Systems

GEOG 3108 [0.5] Soil Properties

Neuroscience

NEUR 3206 [0.5] Sensory and Motor Neuroscience

NEUR 3207 [0.5] Systems Neuroscience

NEUR 4600 [0.5] Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5] Foundations of Physics I

PHYS 1002 [0.5] Foundations of Physics II

PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics

PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion

PHYS 1007 [0.5] Elementary University Physics I

PHYS 1008 [0.5] Elementary University Physics II

PHYS 2202 [0.5] Wave Motion and Optics

PHYS 2604 [0.5] Modern Physics I

PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars

PHYS 3606 [0.5] Modern Physics II

PHYS 3608 [0.5] Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5] Global Environmental Systems

GEOG 2006 [0.5] Introduction to Quantitative Research

GEOG 2013 [0.5] Weather and Water

GEOG 2014 [0.5] The Earth's Surface

GEOG 3003 [0.5] Quantitative Geography

GEOG 3010 [0.5] Field Methods in Physical Geography

GEOG 3102 [0.5] Geomorphology

GEOG 3103 [0.5] Watershed Hydrology

GEOG 3104 [0.5] Principles of Biogeography

GEOG 3105 [0.5] Climate and Atmospheric Change

GEOG 3106 [0.5] Aquatic Science and Management

GEOG 3108 [0.5] Soil Properties

GEOG 4000 [0.5] Field Studies

GEOG 4005 [0.5] Directed Studies in Geography

GEOG 4013 [0.5] Cold Region Hydrology

GEOG 4017 [0.5] Global Biogeochemical Cycles

GEOG 4101 [0.5] Two Million Years of Environmental Change

GEOG 4103 [0.5] Water Resources Engineering

GEOG 4104 [0.5] Microclimatology

GEOG 4108 [0.5] Permafrost

Science Psychology Courses

PSYC 2001 [0.5] Introduction to Research Methods in Psychology

PSYC 2002 [0.5] Introduction to Statistics in Psychology

PSYC 2700 [0.5] Introduction to Cognitive Psychology

PSYC 3000 [1.0] Design and Analysis in Psychological Research

PSYC 3506 [0.5] Cognitive Development

PSYC 3700 [1.0] Cognition (Honours Seminar)

PSYC 3702 [0.5] Perception

PSYC 2307 [0.5] Human Neuropsychology I

PSYC 3307 [0.5] Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body

CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment

MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum

admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow

the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally

be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Philosophy

This section presents the requirements for programs in:

- Philosophy B.A. Honours
- Philosophy with Concentration in Philosophy, Ethics and Public Affairs B.A. Honours
- Philosophy B.A. Combined Honours
- Philosophy B.A.
- Minor in Philosophy
- Mention : Français

Program Requirements

Course Categories for Philosophy

For purposes of program description the Philosophy courses are classified as follows:

History of Philosophy

PHIL 2005 [1.0]	Ancient Philosophy: The Search for Wisdom
PHIL 2101 [0.5]	History of Ethics
PHIL 2201 [0.5]	Introduction to Marxist Philosophy
PHIL 2202 [0.5]	Topics in Marxist Philosophy
PHIL 2700 [0.5]	Asian Philosophy
PHIL 3000 [0.5]	Topics in Ancient Philosophy
PHIL 3001 [0.5]	Early Greek Philosophy
PHIL 3002 [0.5]	17th Century Philosophy
PHIL 3003 [0.5]	18th Century Philosophy
PHIL 3005 [0.5]	19th Century Philosophy
PHIL 3009 [0.5]	Topics in European Philosophy
PHIL 3010 [0.5]	Global Philosophical Traditions
PHIL 3104 [0.5]	The Roots of Analytic Philosophy
PHIL 3330 [0.5]	Topics in History of Social and Political Philosophy

Ethics, Society, and Aesthetics (ESA)

PHIL 2020 [0.5]	Issues in Practical Philosophy
PHIL 2101 [0.5]	History of Ethics
PHIL 2103 [0.5]	Philosophy of Human Rights
PHIL 2106 [0.5]	Information Ethics
PHIL 2120 [0.5]	Philosophy of Technology
PHIL 2201 [0.5]	Introduction to Marxist Philosophy
PHIL 2306 [0.5]	Philosophy and Feminism
PHIL 2307 [0.5]	Gender and Philosophy
PHIL 2320 [0.5]	Children, Literature, and Philosophy
PHIL 2330 [0.5]	Happiness, Well-being, and the Good Life
PHIL 2340 [0.5]	Philosophy and Popular Culture
PHIL 2380 [0.5]	Introduction to Environmental Ethics
PHIL 2408 [0.5]	Bioethics
PHIL 2601 [0.5]	Philosophy of Religion
PHIL 2807 [0.5]	Philosophy of Art
PHIL 2901 [0.5]	Truth and Propaganda
PHIL 3010 [0.5]	Global Philosophical Traditions
PHIL 3102 [0.5]	Philosophy of Law: The Logic of Law
PHIL 3320 [0.5]	Contemporary Ethical Theory
PHIL 3330 [0.5]	Topics in History of Social and Political Philosophy
PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy
PHIL 3350 [0.5]	Philosophy, Ethics, and Public Affairs
PHIL 3360 [0.5]	Philosophy, Economics, and Public Policy
PHIL 3380 [0.5]	Environments, Technology and Values
PHIL 3450 [0.5]	Topics in Aesthetics
PHIL 3540 [0.5]	Philosophy of Emotions

Language, Mind and World (LMW)

PHIL 2010 [0.5]	Issues in Theoretical Philosophy
PHIL 2120 [0.5]	Philosophy of Technology
PHIL 2301 [0.5]	Introduction to the Philosophy of Science
PHIL 2320 [0.5]	Children, Literature, and Philosophy
PHIL 2405 [0.5]	Philosophy of the Paranormal
PHIL 2501 [0.5]	Introduction to Philosophy of Mind
PHIL 2504 [0.5]	Language and Communication
PHIL 2520 [0.5]	Introduction to Philosophical Logic
PHIL 2540 [0.5]	Personal Identity and the Self
PHIL 2550 [0.5]	Moral Psychology
PHIL 2601 [0.5]	Philosophy of Religion
PHIL 2901 [0.5]	Truth and Propaganda
PHIL 3005 [0.5]	19th Century Philosophy
PHIL 3010 [0.5]	Global Philosophical Traditions
PHIL 3104 [0.5]	The Roots of Analytic Philosophy
PHIL 3140 [0.5]	Epistemology
PHIL 3150 [0.5]	Metaphysics
PHIL 3301 [0.5]	Issues in the Philosophy of Science

PHIL 3306 [0.5]	Symbolic Logic
PHIL 3501 [0.5]	Philosophy of Cognitive Science
PHIL 3502 [0.5]	Mind and Action
PHIL 3504 [0.5]	Pragmatics
PHIL 3506 [0.5]	Semantics
PHIL 3530 [0.5]	Philosophy of Language
PHIL 3540 [0.5]	Philosophy of Emotions

Philosophy Courses Open to First-Year Students

Please note that not all of these courses are offered each year.

PHIL 1000 [0.5]	Introductory Philosophy: Fields, Figures and Problems
PHIL 1100 [1.0]	Looking at Philosophy
PHIL 1200 [0.5]	The Meaning of Life
PHIL 1301 [0.5]	Mind, World, and Knowledge
PHIL 1500 [1.0]	Contemporary Moral, Social and Religious Issues
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues
PHIL 1610 [0.5]	Great Philosophical Ideas, Part 1
PHIL 1620 [0.5]	Great Philosophical Ideas, Part 2
PHIL 1700 [0.5]	Philosophy of Love and Sex
PHIL 2001 [0.5]	Introduction to Logic
PHIL 2003 [0.5]	Critical Thinking
PHIL 2330 [0.5]	Happiness, Well-being, and the Good Life
PHIL 2340 [0.5]	Philosophy and Popular Culture

Philosophy

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.0 credits)

1. 2.0 credits in:	2.0
PHIL 2005 [1.0]	Ancient Philosophy: The Search for Wisdom
PHIL 3002 [0.5]	17th Century Philosophy
PHIL 3003 [0.5]	18th Century Philosophy
2. 1.0 credit in:	1.0
PHIL 2010 [0.5]	Issues in Theoretical Philosophy
PHIL 2020 [0.5]	Issues in Practical Philosophy
3. 0.5 credit from:	0.5
PHIL 2001 [0.5]	Introduction to Logic
PHIL 2003 [0.5]	Critical Thinking
4. 1.5 credits in Ethics, Society and Aesthetics at the 2000-level or higher	1.5
5. 1.5 credits in Language, Mind and World at the 2000-level or higher	1.5
6. 1.5 credits in PHIL	1.5
7. 2.0 credits in PHIL at the 4000-level or higher	2.0
B. Credits Not Included in the Major CGPA (10.0 credits)	
8. 8.0 credits not in PHIL	8.0
9. 2.0 credits in free electives	2.0
Total Credits	20.0

**Philosophy with Concentration in Philosophy,
Ethics and Public Affairs
B.A. Honours (20.0 credits)**

A. Credits Included in the Major CGPA (12.0 credits)

1. 1.0 credit in: 1.0

PHIL 2010 [0.5]	Issues in Theoretical Philosophy
PHIL 2020 [0.5]	Issues in Practical Philosophy

2. 2.0 credits from: 2.0

PHIL 2101 [0.5]	History of Ethics
PHIL 3320 [0.5]	Contemporary Ethical Theory
PHIL 3330 [0.5]	Topics in History of Social and Political Philosophy
PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy
PHIL 3350 [0.5]	Philosophy, Ethics, and Public Affairs
PHIL 3360 [0.5]	Philosophy, Economics, and Public Policy

3. 2.0 credits in Philosophy from: 2.0

PHIL 1500 [1.0]	Contemporary Moral, Social and Religious Issues (satisfies two of four requirements)
PHIL 1550 [0.5]	Introduction to Ethics and Social Issues
PHIL 2103 [0.5]	Philosophy of Human Rights
PHIL 2106 [0.5]	Information Ethics
PHIL 2201 [0.5]	Introduction to Marxist Philosophy
PHIL 2202 [0.5]	Topics in Marxist Philosophy
PHIL 2306 [0.5]	Philosophy and Feminism
PHIL 2307 [0.5]	Gender and Philosophy
PHIL 2380 [0.5]	Introduction to Environmental Ethics
PHIL 2408 [0.5]	Bioethics
PHIL 2901 [0.5]	Truth and Propaganda

4. 1.5 credits in History of Philosophy 1.5

5. 1.0 credit in Language, Mind and World 1.0

6. 2.0 credits in PHIL at the 4000 level or above 2.0

7. 2.5 credits in PHIL 2.5

B. Credits Not Included in the Major CGPA (8.0 credits)

Please note that some of the following courses may have PSCI prerequisites.

8. 1.0 credit in: 1.0

PSCI 2301 [0.5]	History of Political Thought I
PSCI 2302 [0.5]	History of Political Thought II

9. 2.0 credits from: 2.0

PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3300 [0.5]	Politics and Literature
PSCI 3303 [0.5]	Feminist Political Theory
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3308 [0.5]	Modern Political Thought
PSCI 3309 [0.5]	Modern Ideologies
PSCI 3311 [0.5]	History of Muslim Political Thought
PSCI 3312 [0.5]	Enlightenment Political Thought
PSCI 3709 [0.5]	Ancient and Medieval Political Thought
PSCI 4302 [0.5]	Political Thought in the Modern Muslim Middle East

PSCI 4311 [0.5]	Political Theories of Democracy and Empire I
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PSCI 4312 [0.5]	Political Theories of Democracy and Empire II
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10. 2.0 credits not in PHIL 2.0

11. 3.0 credits in free electives 3.0

Total Credits 20.0

Philosophy

B.A. Combined Honours (20.0 credits)

Combined Honours programs are available in Philosophy with any other Carleton program that allows for Combined Honours and can accommodate 7.0 credits in Philosophy.

A. Credits Included in the Philosophy CGPA (7.0 credits)

1. 1.5 credits in: 1.5

History of Philosophy or	
HUMS 2000 [1.0]	Reason and Revelation (and .5 credit in History of Philosophy, only applicable to B.Hum)

2. 1.0 credit in: 1.0

PHIL 2010 [0.5]	Issues in Theoretical Philosophy
PHIL 2020 [0.5]	Issues in Practical Philosophy

3. 0.5 credit from: 0.5

PHIL 2001 [0.5]	Introduction to Logic
PHIL 2003 [0.5]	Critical Thinking

4. 1.0 credit in Language, Mind, and World 1.0

5. 1.0 credit in Ethics, Society and Aesthetics 1.0

6. 1.0 credit in PHIL at the 4000-level or above 1.0

7. 1.0 credit in PHIL or 1.0 credit from: 1.0

FYSM 1210 [0.5]	Special Topics in Philosophy
FYSM 1211 [0.5]	Looking at Philosophy
FYSM 1212 [0.5]	Contemporary Moral, Social, and Religious Issues
FYSM 1300 [1.0]	History of Philosophy

B. Additional Credit Requirements (13.0 credits): 13.0

8. The requirements of the other discipline must be satisfied

9. Sufficient free electives to make 20.0 credits in total for the program

Total Credits 20.0

Philosophy

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit in History of Philosophy 1.0

2. 1.0 credit in PHIL, which may be satisfied by: 1.0

FYSM 1210 [0.5]	Special Topics in Philosophy
FYSM 1211 [0.5]	Looking at Philosophy
FYSM 1212 [0.5]	Contemporary Moral, Social, and Religious Issues
FYSM 1300 [1.0]	History of Philosophy

3. 0.5 credit from: 0.5

PHIL 2001 [0.5]	Introduction to Logic
PHIL 2003 [0.5]	Critical Thinking

4. 0.5 credit in 3000-level or higher PHIL 0.5

5. 3.0 credits in 2000-level or higher PHIL 3.0

B. Credits Not Included in the Major CGPA (9.0 credits)

6. 6.0 credits not in PHIL	6.0
7. 3.0 credits in free electives	3.0
Total Credits	15.0

Minor in Philosophy (4.0 credits)

Requirements

1. 2.0 credit in PHIL at the 2000-level or above	2.0
2. 0.5 credit from:	0.5
PHIL 2001 [0.5] Introduction to Logic	
PHIL 2003 [0.5] Critical Thinking	
3. 0.5 credit in PHIL at the 3000-level or above	0.5
4. 1.0 credit in PHIL or 1.0 credit from:	1.0
FYSM 1210 [0.5] Special Topics in Philosophy	
FYSM 1211 [0.5] Looking at Philosophy	
FYSM 1212 [0.5] Contemporary Moral, Social, and Religious Issues	
FYSM 1300 [1.0] History of Philosophy	
5. The remaining requirements of the major discipline(s) and degree must be satisfied	
Total Credits	4.0

Mention : Français (4.0 credits)

Students in the Philosophy B.A. or the Philosophy B.A. Honours program may qualify for the notation *Mention : Français* by fulfilling the requirements outlined below. Those wishing to pursue this option should consult with the Department's Undergraduate Supervisor, whose approval is required for all courses under *Mention : Français*.

Philosophy courses presented in fulfilment of *Mention : Français* requirements can double as courses to satisfy the Philosophy B.A. or the Philosophy B.A. Honours requirements.

To graduate with the notation *Mention : Français*, Philosophy students must include in their program the following:

1. 1.0 credit in French language chosen in consultation with the French Department to perfect the student's French language skills.	1.0
2. 1.0 credit taught in French at Carleton and concerned with the study of the heritage and culture of French Canada	1.0
3. 1.0 credit from:	1.0
PHIL 3901 [0.5] Independent Study	
PHIL 3902 [0.5] Independent Study	
PHIL 3903 [0.5] Independent Study	
PHIL 3906 [0.5] Independent Study	
PHIL 3907 [0.5] Independent Study	
PHIL 3908 [0.5] Independent Study	
with philosophical works read in French and papers submitted in French to be assessed by two members of the Philosophy Department knowledgeable in the language, or 1.0 credit in Philosophy at the 3000-level taught in French at another university and acceptable to the Philosophy Department. In addition, Philosophy students in B.A. Honours or Combined Honours must include:	
4. 1.0 credit from special projects:	1.0
PHIL 4900 [1.0] Tutorial	

PHIL 4901 [0.5] Tutorial	
PHIL 4902 [0.5] Tutorial	
PHIL 4903 [0.5] Tutorial	
PHIL 4904 [0.5] Tutorial	
PHIL 4906 [0.5] Tutorial	

in French, supervised by a member of the Department of Philosophy, or earned in a Philosophy seminar or seminars at the 4000-level taught in French at another university and acceptable to the Philosophy Department. Students must, in addition, satisfy the Honours requirement of 2.0 Carleton credits at the 4000-or 5000-level in Philosophy (1.0 for Combined Honours).

5. Combined Honours students must meet the Mention : Français requirements of both Honours disciplines.

Total Credits **4.0**

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music,

Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PADM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and

B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take

careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English

language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Philosophy (PHIL) Courses

PHIL 1000 [0.5 credit]

Introductory Philosophy: Fields, Figures and Problems

What is metaphysics? Who was Socrates? What is Freedom? This introduction sketches many branches of philosophy and the important problems associated with each. It introduces great philosophers, present and past, and traces enduring philosophical themes.

Precludes additional credit for FYSM 1208 (no longer offered), FYSM 1211, PHIL 1100. This course is not suitable for students with previous formal study of philosophy.

PHIL 1100 [1.0 credit]

Looking at Philosophy

Introduction to philosophy: the nature of logical thinking; the existence of God; the objectivity of values; the meaning of life; free will, determinism and responsibility; the relation between mind and body; immortality; the possibility of knowledge. This course is not intended for Majors.

Precludes additional credit for FYSM 1208 (no longer offered), FYSM 1211 and PHIL 1000.

Lectures three hours a week.

PHIL 1200 [0.5 credit]

The Meaning of Life

An introduction to concerns expressed by the perennial philosophical question, "What is the meaning of life?" Students will be familiarized with the major philosophical approaches to life's meaning through a consideration of various contemporary and late modern works in the philosophy of life.

Lectures three hours a week.

PHIL 1301 [0.5 credit]

Mind, World, and Knowledge

Introduction to a variety of philosophical works, including contemporary, on such topics as: the nature of being, the mental, the external, consciousness, perception, experience, meaning, truth, the nature of knowledge, scientific understanding, and how language and thought represent the world.

Precludes additional credit for PHIL 1006 (no longer offered), PHIL 1501 (no longer offered).

Lectures three hours per week.

PHIL 1500 [1.0 credit]

Contemporary Moral, Social and Religious Issues

Moral theories, atheism or theism, feminism, and free will. Moral arguments concerning abortion, affirmative action, racism, human rights, children's rights, world hunger, capital punishment, euthanasia, censorship, pornography, legal paternalism, animal rights and environmental protection.

Precludes additional credit for FYSM 1209 and PHIL 1550.

Lectures three hours a week.

PHIL 1550 [0.5 credit]

Introduction to Ethics and Social Issues

An introduction to understanding, assessing, and formulating ethical arguments concerning controversial issues. Particular issues studied may include, world hunger, capital punishment, terrorism, euthanasia, abortion, pornography and hate speech, animal rights, the environment, and topics in theories of race, gender and disability.

Precludes additional credit for FYSM 1212 and PHIL 1500. Lectures three hours a week.

PHIL 1610 [0.5 credit]

Great Philosophical Ideas, Part 1

Major figures and developments in philosophy from the early Greeks to the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments.

Precludes additional credit for FYSM 1300, PHIL 1600. Lectures three hours a week.

PHIL 1620 [0.5 credit]

Great Philosophical Ideas, Part 2

Major figures and developments in philosophy after the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments.

Precludes additional credit for FYSM 1300, PHIL 1600. Lectures three hours a week.

PHIL 1700 [0.5 credit]

Philosophy of Love and Sex

A survey of philosophical classics, on themes of romantic love, self-love, altruistic love, sexuality, eroticism and the passion/reason dichotomy, from Plato's Symposium to Foucault's History of Sexuality; and an examination of related contemporary issues in light of these perspectives.

Lectures three hours a week.

PHIL 2001 [0.5 credit]

Introduction to Logic

An introduction to the techniques and philosophical implications of formal logic with emphasis on translation of expressions into symbolic form, testing for logical correctness, the formulation and application of rules of inference, and the relation between logic and language. Open to first-year students.

Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2003 [0.5 credit]

Critical Thinking

Assessment of reasoning and the development of cogent patterns of thinking. Reference to formal logic is minimal. Practice in criticizing examples of reasoning and in formulating one's own reasons correctly and clearly. Open to first-year students.

Lectures three hours a week.

PHIL 2005 [1.0 credit]**Ancient Philosophy: The Search for Wisdom**

An exploration of ancient philosophy as a search for wisdom and happiness from its Presocratic beginnings in Greece to its development in the Hellenistic world and Imperial Rome. Emphasis on philosophy as a contemplative activity and as a way of life.

Also listed as CLCV 2105.

Precludes additional credit for PHIL 2006, CLCV 2006, PHIL 2007, CLCV 2007 (no longer offered).

Prerequisite(s): 0.5 credit in PHIL, or second-year standing.

Lectures three hours a week.

PHIL 2010 [0.5 credit]**Issues in Theoretical Philosophy**

Issues drawn from epistemology, metaphysics, philosophy of mind, philosophy of language, and related fields will be examined through careful study of significant philosophical texts after 1900, along with some ensuing debates.

Prerequisite(s): enrolment in Honours or Combined Honours Philosophy programs, or in philosophy, Ethics, and Public Affairs, or permission of the Department.

Lectures and discussion three hours a week.

PHIL 2020 [0.5 credit]**Issues in Practical Philosophy**

Issues drawn from ethics, social and political philosophy, and related fields will be examined through careful study of significant philosophical texts, along with some ensuing debates.

Includes: Experiential Learning Activity

Prerequisite(s): enrolment in Honours or Combined Honours Philosophy programs, or in philosophy, Ethics, and Public Affairs, or permission of the Department.

Lectures and discussion three hours a week.

PHIL 2101 [0.5 credit]**History of Ethics**

An introduction to ethical theories through a study of some of the major figures in moral philosophy, such as Aristotle, Hume, Kant and Mill.

Prerequisite(s): 0.5 credit in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2103 [0.5 credit]**Philosophy of Human Rights**

Philosophical introduction to human rights sources, concepts, justifications, consequences, and challenges to them. Evolution of selected human rights as a) demands made in political struggles; b) declarations supported by moral or political principles and arguments; c) codes ratified and implemented by governments and international organizations.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2106 [0.5 credit]**Information Ethics**

An exploration of ethical issues that arise in the Age of Information. Topics to be discussed may include technology, surveillance and privacy, social media and privacy, social media and cognitive bias, bias in algorithms, AI ethics, intellectual property, and freedom of expression and assembly.

Precludes additional credit for PHIL 2104 (no longer offered).

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2120 [0.5 credit]**Philosophy of Technology**

Philosophical investigations of the nature of technology and the influence it has on our relationships with others, the natural world, and ourselves. Key themes may include the relation between technology and science and the role of technology in personal identity, social justice, and well-being.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2201 [0.5 credit]**Introduction to Marxist Philosophy**

The evolution of Marx's social and political views in the setting of 18th - and 19th - century anarchism, liberalism and conservatism. Themes of humanism, freedom, rights, the state, democracy, alienation, and inequality, primarily as they develop into the theory of historical materialism.

Precludes additional credit for PHIL 2200.

Prerequisite(s): 0.5 credit in philosophy or permission of the Department.

Lectures three hours a week.

PHIL 2202 [0.5 credit]**Topics in Marxist Philosophy**

The dialectical materialism of Marx, Engels, and Lenin is compared with traditional materialist, idealist, and mechanist philosophy. Marxist views on issues such as equality, ethical objectivity, human well-being, matter and mind, the existence of God, knowledge versus skepticism, freedom of the will, and justice.

Precludes additional credit for PHIL 2200.

Prerequisite(s): PHIL 2201 or 0.5 credit in the history of philosophy at the 2000-level or above.

Lectures three hours a week.

PHIL 2301 [0.5 credit]**Introduction to the Philosophy of Science**

Philosophical issues arising out of the attempt to understand the world scientifically. Topics may include: scientific methodology, revolution, observation, explanation, causation, induction, reduction, the difference between natural and social scientific understanding, realism, instrumentalism, constructivism.

Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2306 [0.5 credit]**Philosophy and Feminism**

A study of philosophical issues arising from feminism. The course includes discussions of the historical roots of feminism, the role of reason and emotion, key concepts such as oppression, sexism, equality and difference, feminism and philosophies of race and of disability, and selected moral/political issues.

Prerequisite(s): 0.5 credit in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2307 [0.5 credit]**Gender and Philosophy**

Topics may include gender and sex in the history of philosophy, intersections between the politics and theories of gender, sexuality, and race, the place of the body in philosophical theory, the influence of gender and sex on science/social science, and queer/trans issues and politics.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2320 [0.5 credit]**Children, Literature, and Philosophy**

An exploration of issues at the nexus of philosophy, children's literature, and childhood studies. Topics may include an examination of children's books and young adult literature through a philosophical lens, as well as a critical examination of the "philosophy with children" movement.

Includes: Experiential Learning Activity

Prerequisite(s): 0.5 credit in philosophy or second-year standing in a philosophy program, or permission of the department.

Lectures three hours a week.

PHIL 2330 [0.5 credit]**Happiness, Well-being, and the Good Life**

A philosophical exploration of what makes a good human life. Topics may include the role of happiness, well-being, and flourishing in a good life, the relations between these aspects, and the extent to which they depend on luck and social considerations.

Lectures three hours a week.

PHIL 2340 [0.5 credit]**Philosophy and Popular Culture**

Philosophy is all around us, it permeates culture. This course explores philosophical questions through the lens of popular culture. The material used may include films, shows, music, novels, video games, advertising, comic books, and so on.

Lectures three hours a week.

PHIL 2380 [0.5 credit]**Introduction to Environmental Ethics**

Major questions in environmental ethics: How should human beings view their relationship to the rest of nature? Is responsible stewardship of the environment compatible with current technology? Must future generations be protected? Do animals, other life forms, endangered species, ecosystems and/or the biosphere have value/rights?.

Precludes additional credit for PHIL 1804.

Lectures three hours a week.

PHIL 2405 [0.5 credit]**Philosophy of the Paranormal**

Examination of claims, concepts, theories and methods in parapsychology. Their scientific character and the relation of paranormal phenomena to philosophical issues such as survival of death, human nature, time, space, causality and perception.

Prerequisite(s): 0.5 credit in philosophy or permission of the Department.

Lectures three hours a week.

PHIL 2408 [0.5 credit]**Bioethics**

Ethical and political issues in medicine, public health, biotechnology, and the life sciences. Topics may include reproductive ethics, research on human subjects, animal research and treatment, justice and health care, physician-patient relationships, death and the end of life, and genetic engineering.

Precludes additional credit for PHIL 3408.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2501 [0.5 credit]**Introduction to Philosophy of Mind**

An introduction to major philosophical issues concerning human cognition. Topics may include: the relation of mind to body, knowledge of other minds, the relation of mental states to personhood and personal identity, mental illness, consciousness, intentionality, action, mental realism.

Precludes additional credit for PHIL 2502.

Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2504 [0.5 credit]**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers. The nature of meaning; the connections between language, communication and cognition; language as a social activity.

Also listed as COMS 2504, LING 2504.

Precludes additional credit for COMM 2800, LALS 2504, LALS 2800 and PHIL 2800.

Prerequisite(s): second-year standing.

Lectures three hours a week.

PHIL 2520 [0.5 credit]**Introduction to Philosophical Logic**

An introduction to features of rational thinking activity, its expression, and its relation to the world, focusing on such topics as predication, truth, negation, necessity, entailment, logical form, or quantification.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2540 [0.5 credit]**Personal Identity and the Self**

Philosophical perspectives on personal identity, the self, and the underlying issue of the relationship of the mind to the body. Both philosophical and psychological concepts of identity are discussed, as are related issues such as memory, introspection, and self-knowledge.

Precludes additional credit for PHIL 2502.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2550 [0.5 credit]**Moral Psychology**

An examination of psychological underpinnings of morality, focusing on studies at the intersection of philosophy, psychiatry, and psychology.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2601 [0.5 credit]**Philosophy of Religion**

A study of philosophical issues arising from religion. Topics may include: arguments for and against the existence of God, religious experience, death and the afterlife, miracles, God and evil, the relationship between religion and science, and the relationship between religion and ethics.

Also listed as RELI 2738.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2700 [0.5 credit]**Asian Philosophy**

An examination of South Asian and East Asian philosophical texts, from the period of the Upanishads and early Buddhism in India to modern philosophical movements. Historical sources may include Hindu, Buddhist, Jain, Confucian or Taoist texts, with a focus on metaphysical, epistemological or ethical themes.

Prerequisite(s): second-year standing.

Lectures three hours a week. May be offered as an online course in selected terms.

PHIL 2807 [0.5 credit]**Philosophy of Art**

Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences.

Also listed as ARTH 2807.

Lecture three hours a week.

PHIL 2901 [0.5 credit]**Truth and Propaganda**

Ancient and modern techniques of persuasion from analytical, ethical and jurisprudential perspectives. Objectivity and bias, advertising and public relations ethics, the viability of democracy in the light of pressures on and within the modern mass media.

Precludes additional credit for PHIL 2900 (no longer offered).

Prerequisite(s): 0.5 credit in PHIL or second-year standing.

Lectures three hours per week.

PHIL 3000 [0.5 credit]**Topics in Ancient Philosophy**

A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle.

Also listed as CLCV 3011.

Prerequisite(s): 0.5 credit in philosophy and second-year standing, or permission of the department.

Lectures three hours a week.

PHIL 3001 [0.5 credit]**Early Greek Philosophy**

A study of the pre-Socratic Greek philosophers and of the Sophists and Socrates.

Also listed as CLCV 3001.

Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Department.

Lectures three hours a week.

PHIL 3002 [0.5 credit]**17th Century Philosophy**

European philosophy of the 17th century. Representative works of writers such as Francis Bacon, Descartes, Spinoza, Leibniz, and Locke.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department.

Lectures three hours a week.

PHIL 3003 [0.5 credit]**18th Century Philosophy**

European philosophy of the 18th century. Representative works of writers such as Berkeley, Hume, and Kant.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department.

Lectures three hours a week.

PHIL 3005 [0.5 credit]**19th Century Philosophy**

European philosophy in the 19th century. May include Hegel, Marx, Schopenhauer, Kierkegaard, Nietzsche, Mill. Precludes additional credit for PHIL 3007.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the Department.

Lectures three hours a week.

PHIL 3009 [0.5 credit]**Topics in European Philosophy**

A study of philosophers, texts, problems and issues in any period of European philosophy.

Prerequisite(s): 0.5 credit in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3010 [0.5 credit]**Global Philosophical Traditions**

A study of philosophers, texts, and doctrines beyond the Western tradition. Traditions covered will vary but may include Asian, African, Muslim or Indigenous philosophy, possibly with critical comparison to Western counterparts. Precludes additional credit for PHIL 2004.

Prerequisite(s): 0.5 credit in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3102 [0.5 credit]**Philosophy of Law: The Logic of Law**

Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession.

Also listed as LAWS 3102.

Prerequisite(s): 0.5 credit in philosophy or permission of the Department.

Lectures three hours a week.

PHIL 3104 [0.5 credit]**The Roots of Analytic Philosophy**

In the context of the work of such writers as Frege and Bradley, a discussion of early philosophical works of Russell, Moore and Wittgenstein. In addition some early representatives of positivism and pragmatism may be examined.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department.

Lectures and seminar three hours a week.

PHIL 3140 [0.5 credit]**Epistemology**

Fundamental issues concerning the relation between evidence, rationality, and knowledge. Topics may include: skepticism, the nature of belief, the structure of justification, the relative contributions of reason and sense experience to knowledge, innate knowledge, the problem of induction, and the knowledge of other minds.

Precludes additional credit for PHIL 2300.

Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program or permission of the department.

PHIL 3150 [0.5 credit]**Metaphysics**

Philosophical issues concerning the fundamental nature of being. Topics may include: time and temporality, space, substance, universals/particulars, identity, causation, freedom/determinism, the nature of norms.

Precludes additional credit for PHIL 2302.

Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program, or permission of the department.

PHIL 3301 [0.5 credit]**Issues in the Philosophy of Science**

Selected topic(s) in the philosophy of science, such as its relationship to values, or in the philosophy of a particular science (such as philosophy of mathematics, philosophy of physics, philosophy of biology, and philosophy of the social sciences).

Prerequisite(s): PHIL 2301 or permission of the department.

Lectures three hours a week.

PHIL 3306 [0.5 credit]**Symbolic Logic**

A review of the basic techniques of propositional and predicate logic. Natural deduction and consistency trees. Soundness and completeness. Alternative semantics. Extensions to basic logic: identity, modal logic with possible world semantics, three valued systems, deontic logic.

Precludes additional credit for PHIL 3305.

Prerequisite(s): PHIL 2001 or permission of the Department.

Lectures three hours a week.

PHIL 3320 [0.5 credit]**Contemporary Ethical Theory**

Critical study of modern ethical theories, their views on the nature of morality and the justification of moral claims. Topics may include utilitarianism, libertarianism, communitarianism, egoism, neo-Kantianism, virtue ethics, social contract ethics, feminist ethics, and moral rights.

Precludes additional credit for PHIL 2102.

Prerequisite(s): PHIL 2020 or PHIL 2101 or permission of the department.

Lectures three hours a week.

PHIL 3330 [0.5 credit]**Topics in History of Social and Political Philosophy**

A critical examination of selected topics and perspectives in the history of social and political philosophy.

Precludes additional credit for PHIL 3300.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3340 [0.5 credit]**Topics in Contemporary Social and Political Philosophy**

A critical examination of some contemporary approaches to topics in social and political philosophy, such as liberalism, feminism, contractarianism, Marxism, libertarianism, and communitarianism.

Precludes additional credit for PHIL 3300.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3350 [0.5 credit]**Philosophy, Ethics, and Public Affairs**

Advanced study of a set of public policy issues, a particular theory or group of theories, or a particular philosopher, concerning philosophical and ethical aspects of public affairs.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

PHIL 3360 [0.5 credit]**Philosophy, Economics, and Public Policy**

The course explores issues at the intersection of philosophy and economics, with a special focus on socially and politically relevant issues. Topics may include: efficiency, cooperation, equity and distributive justice, commodification and the moral limits of markets.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

PHIL 3380 [0.5 credit]**Environments, Technology and Values**

Advanced treatment of ethical issues concerning technologies and environments, including: sustainable development, women and the environment, biological diversity, intrinsic or natural value or rights of non-humans, humans' relation to the rest of the natural world, obligations to future generations, liberty versus equality.

Precludes additional credit for PHIL 2804.

Prerequisite(s): PHIL 1804 or PHIL 2380 and third-year standing, or permission of the Department.

Lectures three hours a week.

PHIL 3450 [0.5 credit]**Topics in Aesthetics**

Topics may include theories of aesthetic norms and valuation from ancient Greece onward, or applications of aesthetic theory to various genres of art.

Precludes additional credit for PHIL 2400, PHIL 3400, PHIL 3401, and PHIL 3402.

Prerequisite(s): At least 0.5 credit in philosophy, or HUMS 1000, or ARTH 2807, or permission of the Department.

Seminar two hours a week.

PHIL 3501 [0.5 credit]**Philosophy of Cognitive Science**

Philosophical issues arising from cognitive science.

Topics may include: the proper methodology for studying the mind, the very possibility of a "science of mind", the computer model of the mind and reactions to it.

Prerequisite(s): PHIL 2501 or PHIL 2502 or second-year standing in Cognitive Science, or permission of the department.

PHIL 3502 [0.5 credit]**Mind and Action**

Philosophical thought concerning the relation between mentality and agency. Topics may include: the relation between belief, desire, and behaviour; rationality and normativity; representing and doing; subjectivity and intersubjectivity; physical and psychological laws; mental causation. Authors may include: Wittgenstein, Heidegger, Ryle, Sellars, Anscombe, Davidson, Taylor, McDowell.

Prerequisite(s): PHIL 2501 or PHIL 2502, or permission of the Department.

PHIL 3504 [0.5 credit]**Pragmatics**

The study of language use in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. May include cross-cultural pragmatics.

Also listed as LING 3504.

Precludes additional credit for LALS 2800 [1.0], LALS 3504, MCOM 2800 [1.0], MCOM 3504 and PHIL 2800 [1.0].

Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3505/PHIL 3506; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies.

Lectures three hours a week.

PHIL 3506 [0.5 credit]**Semantics**

Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.

Also listed as LING 3505.

Precludes additional credit for LALS 3505.

Prerequisite(s): third-year standing, and one of LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or PHIL/LALS/LING 3504; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies.

Lectures three hours a week.

PHIL 3530 [0.5 credit]**Philosophy of Language**

An intensive introduction to philosophy of language. Topics may include meaning, reference and truth, speech acts, the nature of concepts, language learning, metaphor, compositionality, context-sensitivity.

Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3504 or LALS/LING 3505/PHIL 3506; or permission of the department.

Lectures three hours a week.

PHIL 3540 [0.5 credit]**Philosophy of Emotions**

Emotions are central to human experience and widely studied in philosophy and science. In order to better understand them and their role in our lives, this course explores philosophical questions about emotions as they arise in philosophy of mind and cognitive science, ethics, and aesthetics.

Prerequisite(s): PHIL 2501, or permission of the department.

Lectures three hours a week.

PHIL 3901 [0.5 credit]**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3902 [0.5 credit]**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3903 [0.5 credit]**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3906 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3907 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3908 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 4003 [0.5 credit]**Seminar in philosophy Before the Modern Period**

Detailed study of selected philosophers or issues in philosophy before the modern period.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4004 [0.5 credit]**Seminar in philosophy Before the Modern Period**

Detailed study of selected philosophers or issues in philosophy before the modern period.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4005 [0.5 credit]**Seminar in Modern Philosophy**

Detailed study of selected philosophers or issues in modern philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4006 [0.5 credit]**Seminar in Modern Philosophy**

Detailed study of selected philosophers or issues in modern philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4007 [0.5 credit]**Seminar in Contemporary Philosophy**

Detailed study of selected philosophers or issues in contemporary philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4008 [0.5 credit]**Seminar in Contemporary Philosophy**

Detailed study of selected philosophers or issues in contemporary philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4055 [0.5 credit]**Lexical Semantics**

Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.

Also listed as LING 4510.

Precludes additional credit for LING 4055 (no longer offered).

Prerequisite(s): LING 3505 or PHIL 3506.

Also offered at the graduate level, with different requirements, as LING 5510 and PHIL 5660, for which additional credit is precluded.

Seminars three hours a week.

PHIL 4100 [0.5 credit]**Special Topic**

Detailed study of a special topic in philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5000, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4210 [0.5 credit]**Seminar in Philosophy of Language or Linguistics**

Detailed study of selected issues or the work of selected philosophers in philosophy of language or on philosophical topics in linguistics.

Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4220 [0.5 credit]**Seminar in philosophy of Mind or Cognition**

Detailed study of selected issues or the work of selected philosophers in philosophy of mind or philosophical aspects of cognition.

Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4230 [0.5 credit]**Seminar in Metaphysics, Epistemology, or Philosophy of Science**

Detailed study of selected issues or the work of selected philosophers in metaphysics, epistemology, or philosophy of science.

Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5250, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4300 [0.5 credit]**Seminar in Ethical Theory or Meta-Ethics**

Detailed study of selected issues pertaining to ethical theory or issues of meta-ethics such as realism, relativism, moral knowledge.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5300, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4320 [0.5 credit]**Seminar in Ethics or Moral Philosophy**

Detailed study of selected issues in ethics or moral philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4330 [0.5 credit]**Seminar in Social or Political Philosophy**

Detailed study of selected issues in social or political philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4403 [0.5 credit]**Special Topic in Applied Ethics**

Detailed study of a special topic in applied ethics.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4404 [0.5 credit]**Special Topic in Applied Ethics**

Detailed study of a special topic in applied ethics.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4405 [0.5 credit]**Special Topic in Aesthetics or Philosophy of Art**

Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4406 [0.5 credit]**Special Topic in Aesthetics or Philosophy of Art**

Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4407 [0.5 credit]**Special Topic in Philosophy of Law**

Detailed study of a special topic in philosophy of law.

Also listed as LAWS 4103.

Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.

Seminars three hours a week.

PHIL 4408 [0.5 credit]**Special Topic in Philosophy of Law**

Detailed study of a special topic in philosophy of law.

Also listed as LAWS 4104.

Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.

Seminars three hours a week.

PHIL 4503 [0.5 credit]**Special Topic in Philosophy of Computing**

Detailed study of a special topic in philosophy of computing.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4504 [0.5 credit]**Special Topic in Philosophy of Computing**

Detailed study of a special topic in philosophy of computing.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4505 [0.5 credit]**Formal Semantics**

Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.

Also listed as LING 4505.

Precludes additional credit for LALS 4507 (no longer offered).

Prerequisite(s): LALS 3505 or LING 3505 or PHIL 3506 or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Seminars three hours a week.

PHIL 4603 [0.5 credit]**Special Topic in Feminist Philosophy**

Detailed study of a special topic in feminist philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4604 [0.5 credit]**Special Topic in Feminist Philosophy**

Detailed study of a special topic in feminist philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4606 [0.5 credit]**Special Topic in Continental Philosophy**

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4607 [0.5 credit]**Special Topic in Continental Philosophy**

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4701 [0.5 credit]**Special Topic in Logic**

Detailed study of a special topic in Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4702 [0.5 credit]**Special Topic in Logic**

Detailed study of a special topic in Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4703 [0.5 credit]**Special Topic in Philosophical Logic**

Detailed study of a special topic in Philosophical Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4704 [0.5 credit]**Special Topic in Philosophical Logic**

Detailed study of a special topic in Philosophical Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4900 [1.0 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note:

Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4901 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note:

Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4902 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note:

Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4903 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note:

Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4904 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note:

Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4906 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note:

Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

Physics

This section presents the requirements for programs in:

- Physics (Astrophysics Stream) B.Sc. Honours
- Physics (Experimental Stream) B.Sc. Honours
- Physics (Theory Stream) B.Sc. Honours
- Physics B.Sc. Major
- Applied Physics B.Sc. Honours
- Mathematics and Physics B.Sc. Double Honours
- Biology and Physics B.Sc. Combined Honours
- Chemistry and Physics B.Sc. Combined Honours
- Minor in Physics

The Department of Physics also offers the program: Engineering Physics - B.Eng. Consult the Engineering program section for details about this program.

Program Requirements

Course Categories for Physics

The program descriptions below make use of the following course categories, which are defined in the B.Sc. Regulations section.

- Approved Courses Outside the Faculties of Science and Engineering and Design
- Free Elective

**Physics (Astrophysics Stream)
B.Sc. Honours (20.0 credits)**

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit from: 1.0

PHYS 1001 [0.5] Foundations of Physics I
& PHYS 1002 [0.5] Foundations of Physics II

PHYS 1003 [0.5] Introductory Mechanics and
& PHYS 1004 [0.5] Thermodynamics
Introductory Electromagnetism and
Wave Motion

PHYS 1007 [0.5] Elementary University Physics I
& PHYS 1008 [0.5] Elementary University Physics II
(with an average grade of B- or
higher)

2. 2.5 credits in: 2.5

PHYS 2202 [0.5] Wave Motion and Optics

PHYS 2203 [0.5] Astronomy

PHYS 2305 [0.5] Electricity and Magnetism

PHYS 2401 [0.5] Thermal Physics

PHYS 2604 [0.5] Modern Physics I

3. 5.0 credits in: 5.0

PHYS 3009 [0.5] Third Year Physics Laboratory:
Selected Experiments and
Seminars with Observational
Astronomy

PHYS 3308 [0.5] Electromagnetism

PHYS 3606 [0.5] Modern Physics II

PHYS 3701 [0.5] Elements of Quantum Mechanics

PHYS 3802 [0.5] Advanced Dynamics

PHYS 3807 [0.5] Mathematical Physics I

PHYS 4201 [0.5] Astrophysics

PHYS 4202 [0.5] Cosmology

PHYS 4409 [0.5] Thermodynamics and Statistical
Physics

PHYS 4707 [0.5] Introduction to Quantum Mechanics
I

4. 1.0 credit from: 1.0

a. PHYS 4907 plus 0.5 credit 4000-level PHYS

b. PHYS 4908 plus 0.5 credit 4000-level PHYS

c. PHYS 4909 [1.0]

5. 0.5 credit in PHYS at the 4000-level or above 0.5

6. 0.5 credit in PHYS, COMP, MATH and/or STAT at the 3000-level or above 0.5

B. Credits Not Included in the Major CGPA (9.5 credits)

7. 1.0 credit from: 1.0

BIOL 1103 [0.5] Foundations of Biology I
& BIOL 1104 [0.5] Foundations of Biology II

CHEM 1001 [0.5] General Chemistry I
& CHEM 1002 [0.5] General Chemistry II

CHEM 1005 [0.5] Elementary Chemistry I
& CHEM 1006 [0.5] Elementary Chemistry II

ERTH 1006 [0.5] Exploring Planet Earth
& EARTH 1009 [0.5] The Earth System Through Time

8. 3.5 credits in: 3.5

MATH 1004 [0.5] Calculus for Engineering or Physics

MATH 1005 [0.5] Differential Equations and Infinite
Series for Engineering or Physics

MATH 1104 [0.5] Linear Algebra for Engineering or
Science

MATH 2004 [0.5] Multivariable Calculus for
Engineering or Physics

MATH 2107 [0.5] Linear Algebra II

MATH 3705 [0.5] Mathematical Methods I

STAT 3502 [0.5] Probability and Statistics

9. 0.5 credit in: 0.5

MATH 3800 [0.5] Mathematical Modeling and
Computational Methods

10. 1.0 credits from: 1.0

COMP 1005 [0.5] Introduction to Computer Science I
& COMP 1006 [0.5] Introduction to Computer Science II

or

ECOR 1606 [0.5] Problem Solving and Computers
& ECOR 2606 [0.5] Numerical Methods

11. 0.5 credit at the 2000-level or higher in COMP, MATH, or PHYS 0.5

12. 0.5 credit in: 0.5

NSCI 1000 [0.5] Seminar in Science (or approved
courses outside the faculties of
Science and Engineering and
Design)

Approved courses outside the faculties of Science and
Engineering and Design

13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design 1.5

14. 1.0 credit in free electives 1.0

Total Credits 20.0

**Physics (Experimental Stream)
B.Sc. Honours (20.0 credits)**

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit from: 1.0

PHYS 1001 [0.5] Foundations of Physics I
& PHYS 1002 [0.5] Foundations of Physics II
(recommended)

PHYS 1003 [0.5] Introductory Mechanics and
& PHYS 1004 [0.5] Thermodynamics
Introductory Electromagnetism and
Wave Motion

PHYS 1007 [0.5] Elementary University Physics I
& PHYS 1008 [0.5] Elementary University Physics II
(with an average grade of B- or
higher)

2. 2.0 credits in: 2.0

PHYS 2202 [0.5] Wave Motion and Optics

PHYS 2305 [0.5] Electricity and Magnetism

PHYS 2401 [0.5] Thermal Physics

PHYS 2604 [0.5] Modern Physics I

3. 1.0 credit in: 1.0

ELEC 2501 [0.5] Circuits and Signals

ELEC 2507 [0.5] Electronics I

4. 4.5 credits in: 4.5

PHYS 3007 [0.5] Third Year Physics Laboratory:
Selected Experiments and
Seminars

PHYS 3308 [0.5] Electromagnetism

PHYS 3606 [0.5] Modern Physics II

PHYS 3701 [0.5]	Elements of Quantum Mechanics	
PHYS 3802 [0.5]	Advanced Dynamics	
PHYS 3807 [0.5]	Mathematical Physics I	
PHYS 4409 [0.5]	Thermodynamics and Statistical Physics	
PHYS 4008 [0.5]	Fourth-Year Physics Laboratory: Selected Experiments and Workshop	
PHYS 4707 [0.5]	Introduction to Quantum Mechanics I	
5. 1.0 credit from:		1.0
a. PHYS 4907 [0.5] plus 0.5 credit 4000-level PHYS		
b. PHYS 4908 [0.5] plus 0.5 credit 4000-level PHYS		
c. PHYS 4909 [1.0]		
6. 1.0 credit in 4000-level or above PHYS (PHYS 4807 is recommended for 0.5 credit)		1.0
7. 0.5 credit in 3000-level or above PHYS, COMP, ELEC, MATH and/or STAT		0.5
B. Credits Not Included In the Major CGPA (9.0 credits)		
8. 1.0 credit from:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
& BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
& ERTH 1009 [0.5]	The Earth System Through Time	
9. 3.0 credits in:		3.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
MATH 3705 [0.5]	Mathematical Methods I	
STAT 3502 [0.5]	Probability and Statistics	
10. 0.5 credit in:		0.5
MATH 3800 [0.5]	Mathematical Modeling and Computational Methods	
11. 1.0 credit from:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
& COMP 1006 [0.5]	Introduction to Computer Science II	
or		
ECOR 1606 [0.5]	Problem Solving and Computers	
& ECOR 2606 [0.5]	Numerical Methods	
12. 0.5 credit at the 2000-level or higher in COMP, MATH, or PHYS		0.5
13. 0.5 credit from:		0.5
NSCI 1000 [0.5]	Seminar in Science	
Approved courses outside the faculties of Science and Engineering and Design		
14. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
15. 1.0 credit in free electives		1.0
Total Credits		20.0

Physics (Theory Stream) B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 1.0 credit from:		1.0
PHYS 1001 [0.5]	Foundations of Physics I	
& PHYS 1002 [0.5]	Foundations of Physics II (recommended)	
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics	
& PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II (with an average grade of B- or higher)	
2. 2.0 credits in:		2.0
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2305 [0.5]	Electricity and Magnetism	
PHYS 2401 [0.5]	Thermal Physics	
PHYS 2604 [0.5]	Modern Physics I	
3. 4.5 credits in:		4.5
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3308 [0.5]	Electromagnetism	
PHYS 3606 [0.5]	Modern Physics II	
PHYS 3701 [0.5]	Elements of Quantum Mechanics	
PHYS 3802 [0.5]	Advanced Dynamics	
PHYS 3807 [0.5]	Mathematical Physics I	
PHYS 4409 [0.5]	Thermodynamics and Statistical Physics	
PHYS 4707 [0.5]	Introduction to Quantum Mechanics I	
PHYS 4708 [0.5]	Introduction to Quantum Mechanics II	
4. 1.0 credit from:		1.0
a. PHYS 4907 plus 0.5 credit 4000-level PHYS		
b. PHYS 4908 plus 0.5 credit 4000-level PHYS		
c. PHYS 4909 [1.0]		
5. 1.0 credit in PHYS at the 4000-level or above		1.0
6. 1.0 credit in PHYS, COMP, MATH and/or STAT at the 3000-level or above		1.0
B. Credits Not Included In the Major CGPA (9.5 credits)		
7. 1.0 credit from:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
& BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
& ERTH 1009 [0.5]	The Earth System Through Time	
8. 3.5 credits in:		3.5
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	

MATH 2107 [0.5]	Linear Algebra II	
MATH 3705 [0.5]	Mathematical Methods I	
STAT 3502 [0.5]	Probability and Statistics	
9. 0.5 credit in:		0.5
MATH 3800 [0.5]	Mathematical Modeling and Computational Methods	
10. 1.0 credit from:		1.0
COMP 1005 [0.5]	Introduction to Computer Science I	
& COMP 1006 [0.5]	Introduction to Computer Science II	
or		
ECOR 1606 [0.5]	Problem Solving and Computers	
& ECOR 2606 [0.5]	Numerical Methods	
11. 0.5 credit at the 2000-level or higher in COMP, MATH, or PHYS		0.5
12. 0.5 credit in:		0.5
NSCI 1000 [0.5]	Seminar in Science	
or approved courses outside the faculties of Science and Engineering and Design		
13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
14. 1.0 credit in free electives		1.0
Total Credits		20.0

Physics

B.Sc. Major (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit from:		1.0
PHYS 1001 [0.5]	Foundations of Physics I	
& PHYS 1002 [0.5]	Foundations of Physics II (recommended)	
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II (with an average grade of B- or higher)	
2. 2.0 credits in:		2.0
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2305 [0.5]	Electricity and Magnetism	
PHYS 2401 [0.5]	Thermal Physics	
PHYS 2604 [0.5]	Modern Physics I	
3. 1.0 credit in approved computer science, engineering, mathematics or statistics electives at the 2000-level or higher which may include 0.5 credit 1000-level computer science		1.0
4. 2.0 credits in:		2.0
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3308 [0.5]	Electromagnetism	
PHYS 3606 [0.5]	Modern Physics II	
or PHYS 3608 [0.5]	Modern Applied Physics	
PHYS 3701 [0.5]	Elements of Quantum Mechanics	
5. 1.0 credit in PHYS at the 4000-level		1.0
6. 1.5 credit in PHYS at the 3000-level or above		1.5
7. 0.5 credit in ELEC and/or science faculty electives (excluding TSES) at the 3000-level or above		0.5

B. Credits Not Included In the Major CGPA (11.0 credits)

8. 1.0 credit from:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
& BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
& ERTH 1009 [0.5]	The Earth System Through Time	
9. 3.0 credits in:		3.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
MATH 3705 [0.5]	Mathematical Methods I	
STAT 2507 [0.5]	Introduction to Statistical Modeling I	
or STAT 3502 [0.5]	Probability and Statistics	
10. 0.5 credit from:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	
ECOR 1606 [0.5]	Problem Solving and Computers	
11. 3.5 credits in Advanced Science Faculty Electives and/or approved courses outside the Faculties of Science and Engineering selected in consultation with the Department to complement the study of physics; these credits may be used with an additional 0.5 credit to complete the requirements of a minor designation		3.5
12. 0.5 credit from:		0.5
NSCI 1000 [0.5]	Seminar in Science	
Approved courses outside the faculties of Science and Engineering and Design		
13. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		1.5
14. 1.0 credit in free electives		1.0
Total Credits		20.0

Applied Physics

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (11.0 credits)

1. 1.0 credit from:		1.0
PHYS 1001 [0.5]	Foundations of Physics I	
& PHYS 1002 [0.5]	Foundations of Physics II (recommended)	
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics	
	Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II (with an average grade of B- or higher)	
2. 2.0 credits in:		2.0
PHYS 2202 [0.5]	Wave Motion and Optics	
PHYS 2305 [0.5]	Electricity and Magnetism	
PHYS 2401 [0.5]	Thermal Physics	
PHYS 2604 [0.5]	Modern Physics I	
3. 1.0 credit in:		1.0

ELEC 2501 [0.5]	Circuits and Signals	
ELEC 2507 [0.5]	Electronics I	
4. 0.5 credit from:		0.5
ECOR 2606 [0.5]	Numerical Methods	
MATH 3800 [0.5]	Mathematical Modeling and Computational Methods	
5. 4.0 credits in:		4.0
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3308 [0.5]	Electromagnetism	
PHYS 3608 [0.5]	Modern Applied Physics	
PHYS 3701 [0.5]	Elements of Quantum Mechanics	
PHYS 3802 [0.5]	Advanced Dynamics	
PHYS 3807 [0.5]	Mathematical Physics I	
PHYS 4008 [0.5]	Fourth-Year Physics Laboratory: Selected Experiments and Workshop	
PHYS 4707 [0.5]	Introduction to Quantum Mechanics I	
6. 1.0 credit from:		1.0
PHYS 3207 [0.5]	Topics in Biophysics	
PHYS 4203 [0.5]	Physical Applications of Fourier Analysis	
PHYS 4208 [0.5]	Modern Optics	
PHYS 4608 [0.5]	Nuclear Physics	
PHYS 4807 [0.5]	Statistical Data Analysis Techniques for Physics	
7. 0.5 credit from:		0.5
ELEC 3509 [0.5]	Electronics II	
ELEC 3908 [0.5]	Physical Electronics	
COMP at the 3000-level		
PHYS at the 4000-level		
8. 1.0 credit from:		1.0
a. PHYS 4907 plus 0.5 credit 4000-level PHYS		
b. PHYS 4908 plus 0.5 credit 4000-level PHYS		
c. PHYS 4909 [1.0]		
B. Credits Not Included in the Major CGPA (9.0 credits)		
9. 1.0 credit from:		1.0
BIOL 1103 [0.5]	Foundations of Biology I	
& BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
ERTH 1006 [0.5]	Exploring Planet Earth	
& ERTH 1009 [0.5]	The Earth System Through Time	
10. 3.0 credits in:		3.0
MATH 1004 [0.5]	Calculus for Engineering or Physics	
MATH 1005 [0.5]	Differential Equations and Infinite Series for Engineering or Physics	
MATH 1104 [0.5]	Linear Algebra for Engineering or Science	
MATH 2004 [0.5]	Multivariable Calculus for Engineering or Physics	
STAT 3502 [0.5]	Probability and Statistics	
MATH 3705 [0.5]	Mathematical Methods I	
11. 0.5 credit from:		0.5
COMP 1005 [0.5]	Introduction to Computer Science I	

ECOR 1606 [0.5]	Problem Solving and Computers	
12. 4.0 credits in:		4.0
a. (COMP 1006 and COMP 2401) or (SYSC 2006 and SYSC 2004)		
b. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design		
c. 1.5 credit in free electives		
13. 0.5 credit from:		0.5
NSCI 1000 [0.5]	Seminar in Science	
Approved courses outside the faculties of Science and Engineering and Design		
Total Credits		20.0

Mathematics and Physics

B.Sc. Double Honours (21.5 credits)

Note that the following courses have minimum grade requirements in their prerequisites. Refer to the section Course Prerequisites under the Mathematics and Statistics programs sections of the calendar.

MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2100 [1.0]	Algebra	
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	

A. Credits Included in the Major CGPA (17.0 credits)

1. 7.5 credits in:		7.5
MATH 1052 [0.5]	Calculus and Introductory Analysis I	
MATH 1152 [0.5]	Introductory Algebra I	
MATH 1800 [0.5]	Introduction to Mathematical Reasoning	
MATH 2000 [1.0]	Multivariable Calculus and Fundamentals of Analysis	
MATH 2052 [0.5]	Calculus and Introductory Analysis II	
MATH 2100 [1.0]	Algebra	
MATH 2152 [0.5]	Introductory Algebra II	
MATH 2454 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3001 [0.5]	Real Analysis I (Honours)	
MATH 3008 [0.5]	Ordinary Differential Equations (Honours)	
MATH 3057 [0.5]	Functions of a Complex Variable (Honours)	
MATH 3705 [0.5]	Mathematical Methods I	
STAT 2655 [0.5]	Introduction to Probability with Applications (Honours)	
2. 0.5 credit from:		0.5
MATH 3002 [0.5]	Real Analysis II (Honours)	
MATH 3003 [0.5]	Advanced Differential Calculus (Honours)	
MATH 3106 [0.5]	Introduction to Group Theory (Honours)	
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3606 [0.5]	Modern Physics II	
3. 1.0 credit in 4000-level or higher MATH, STAT		1.0

4. 1.0 credit from:	1.0
PHYS 1001 [0.5] Foundations of Physics I & PHYS 1002 [0.5] Foundations of Physics II (recommended)	
PHYS 1003 [0.5] Introductory Mechanics and & PHYS 1004 [0.5] Thermodynamics Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II (with an average grade of B- or higher)	
5. 2.0 credits in:	2.0
PHYS 2202 [0.5] Wave Motion and Optics	
PHYS 2305 [0.5] Electricity and Magnetism	
PHYS 2401 [0.5] Thermal Physics	
PHYS 2604 [0.5] Modern Physics I	
6. 3.0 credits in:	3.0
PHYS 3308 [0.5] Electromagnetism	
PHYS 3701 [0.5] Elements of Quantum Mechanics	
PHYS 3802 [0.5] Advanced Dynamics	
PHYS 4409 [0.5] Thermodynamics and Statistical Physics	
PHYS 4707 [0.5] Introduction to Quantum Mechanics I	
PHYS 4708 [0.5] Introduction to Quantum Mechanics II	
7. 1.0 credit in PHYS at the 4000-level	1.0
8. 1.0 credit from:	1.0
a. MATH 4905 or PHYS 4907 or PHYS 4908 plus 0.5 credit 4000-level MATH or PHYS	
b. PHYS 4909 [1.0]	
B. Credits Not Included in the Major CGPA (4.5 credits)	
9. 1.0 credit from:	1.0
BIOL 1103 [0.5] Foundations of Biology I & BIOL 1104 [0.5] Foundations of Biology II	
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II	
CHEM 1005 [0.5] Elementary Chemistry I & CHEM 1006 [0.5] Elementary Chemistry II	
ERTH 1006 [0.5] Exploring Planet Earth & EARTH 1009 [0.5] The Earth System Through Time	
10. 0.5 credit in:	0.5
COMP 1005 [0.5] Introduction to Computer Science I	
11. 0.5 credit from:	0.5
NSCI 1000 [0.5] Seminar in Science	
Approved courses outside the faculties of Science and Engineering and Design	
12. 1.5 credits in approved courses outside the faculties of Science and Engineering and Design	1.5
13. 1.0 credit in free electives	1.0
Total Credits	21.5

Biology and Physics

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.5 credits)

1. 1.0 credit from:	1.0
PHYS 1001 [0.5] Foundations of Physics I & PHYS 1002 [0.5] Foundations of Physics II (recommended)	

PHYS 1003 [0.5] Introductory Mechanics and & PHYS 1004 [0.5] Thermodynamics Introductory Electromagnetism and Wave Motion	
PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II (with an average grade of B- or higher)	
2. 3.5 credits in:	3.5
PHYS 2604 [0.5] Modern Physics I	
PHYS 2202 [0.5] Wave Motion and Optics	
PHYS 2305 [0.5] Electricity and Magnetism	
PHYS 2401 [0.5] Thermal Physics	
PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3207 [0.5] Topics in Biophysics	
PHYS 3701 [0.5] Elements of Quantum Mechanics	
3. 1.0 credit from:	1.0
PHYS 3308 [0.5] Electromagnetism	
PHYS 3606 [0.5] Modern Physics II	
PHYS 3802 [0.5] Advanced Dynamics	
4. 1.0 credit from:	1.0
PHYS 3308 [0.5] Electromagnetism	
PHYS 3606 [0.5] Modern Physics II	
PHYS 3802 [0.5] Advanced Dynamics	
PHYS 3807 [0.5] Mathematical Physics I	
PHYS 4203 [0.5] Physical Applications of Fourier Analysis	
PHYS 4409 [0.5] Thermodynamics and Statistical Physics	
PHYS 4707 [0.5] Introduction to Quantum Mechanics I	
5. 4.0 credits from:	4.0
BIOL 1103 [0.5] Foundations of Biology I	
BIOL 1104 [0.5] Foundations of Biology II	
BIOL 2200 [0.5] Cellular Biochemistry	
BIOL 2104 [0.5] Introductory Genetics	
BIOL 2001 [0.5] Animals: Form and Function	
BIOL 2002 [0.5] Plants: Form and Function	
BIOL 3201 [0.5] Cell Biology	
BIOL 3104 [0.5] Molecular Genetics	
BIOL 3305 [0.5] Human and Comparative Physiology	
6. 1.0 credit from:	1.0
BIOL 3501 [0.5] Biomechanics	
BIOL 4106 [0.5] Advances in Molecular Biology	
BIOL 4109 [0.5] Laboratory Techniques in Molecular Genetics	
BIOL 4201 [0.5] Advanced Cell Culture and Tissue Engineering	
BIOL 4202 [0.5] Mutagenesis and DNA Repair	
BIOL 4301 [0.5] Current Topics in Biotechnology	
BIOL 4306 [0.5] Animal Neurophysiology	
BIOL 4309 [0.5] Studies in Human Performance	
BIOL 4319 [0.5] Studies in Exercise Physiology	
7. 1.0 credit from:	1.0
BIOL 4905 [1.0] Honours Workshop	

BIOL 4907 [1.0]	Honours Essay and Research Proposal	
BIOL 4908 [1.0]	Honours Research Thesis	
PHYS 4909 [1.0]	Fourth-Year Project	
PHYS 4907 plus 0.5 credit 4000-level PHYS		
PHYS 4908 plus 0.5 credit 4000-level PHYS		
B. Credits Not Included in the Major CGPA (7.5 credits)		
8. 1.0 credit in:		1.0
CHEM 1001 [0.5] General Chemistry I & CHEM 1002 [0.5] General Chemistry II		
9. 1.5 credits in:		1.5
MATH 1004 [0.5] Calculus for Engineering or Physics		
MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics		
MATH 1104 [0.5] Linear Algebra for Engineering or Science		
10. 2.0 credits in:		2.0
STAT 2507 [0.5] Introduction to Statistical Modeling I		
MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics		
MATH 3705 [0.5] Mathematical Methods I		
MATH 3800 [0.5] Mathematical Modeling and Computational Methods		
11. 0.5 credit in:		0.5
COMP 1005 [0.5] Introduction to Computer Science I		
12. 2.0 credits in	approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000)	2.0
13. 0.5 credit in	free electives	0.5
Total Credits		20.0

Chemistry and Physics

B.Sc. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (13.0 credits)

1. 1.0 credit from:		1.0
PHYS 1001 [0.5] Foundations of Physics I & PHYS 1002 [0.5] Foundations of Physics II (recommended)		
PHYS 1003 [0.5] Introductory Mechanics and & PHYS 1004 [0.5] Thermodynamics		
PHYS 1007 [0.5] Elementary University Physics I & PHYS 1008 [0.5] Elementary University Physics II (with an average grade of B- or higher)		
2. 3.0 credits in:		3.0
PHYS 2202 [0.5] Wave Motion and Optics		
PHYS 2305 [0.5] Electricity and Magnetism		
PHYS 2604 [0.5] Modern Physics I		
PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars		
PHYS 3701 [0.5] Elements of Quantum Mechanics		
PHYS 3807 [0.5] Mathematical Physics I		
3. 1.5 credits from:		1.5
PHYS 3308 [0.5] Electromagnetism		
PHYS 3606 [0.5] Modern Physics II		
PHYS 3802 [0.5] Advanced Dynamics		

PHYS 4707 [0.5]	Introduction to Quantum Mechanics I	
4. 0.5 credit in	PHYS at the 4000 level	0.5
5. 5.0 credits in:		5.0
CHEM 1001 [0.5] General Chemistry I		
CHEM 1002 [0.5] General Chemistry II		
CHEM 2103 [0.5] Physical Chemistry I		
CHEM 2203 [0.5] Organic Chemistry I		
CHEM 2204 [0.5] Organic Chemistry II		
CHEM 2501 [0.5] Introduction to Inorganic and Bioinorganic Chemistry		
CHEM 3100 [0.5] Physical Chemistry II		
CHEM 3102 [0.5] Methods of Computational Chemistry		
CHEM 3503 [0.5] Inorganic Chemistry I		
CHEM 4102 [0.5] Advanced Topics in Physical Chemistry II		
6. 0.5 credit from:		0.5
CHEM 3106 [0.5] Computational Chemistry Methods Laboratory		
CHEM 3107 [0.5] Experimental Methods in Nanoscience		
7. 0.5 credit in	CHEM at the 4000 level	0.5
8. 1.0 credit from:		1.0
CHEM 4908 [1.0] Research Project and Seminar		
PHYS 4909 [1.0] Fourth-Year Project		
PHYS 4907 plus 0.5 credit in PHYS at the 4000 level		
PHYS 4908 plus 0.5 credit in PHYS at the 4000 level		
B. Credits Not Included in the Major CGPA (7.0 credits)		
9. 3.0 credits in:		3.0
MATH 1004 [0.5] Calculus for Engineering or Physics		
MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics		
MATH 1104 [0.5] Linear Algebra for Engineering or Science		
MATH 2004 [0.5] Multivariable Calculus for Engineering or Physics		
STAT 3502 [0.5] Probability and Statistics		
MATH 3705 [0.5] Mathematical Methods I		
10. 0.5 credit from:		0.5
COMP 1005 [0.5] Introduction to Computer Science I		
ECOR 1606 [0.5] Problem Solving and Computers		
11. 0.5 credit from:		0.5
MATH 3800 [0.5] Mathematical Modeling and Computational Methods		
ECOR 2606 [0.5] Numerical Methods		
12. 0.5 credit from:		0.5
NSCI 1000 [0.5] Seminar in Science		
Approved courses outside the faculties of Science and Engineering and Design		
13. 1.5 credits in	approved courses outside the faculties of Science and Engineering and Design (may include NSCI 1000, if not used above)	1.5
14. 1.0 credit in	free electives.	1.0
Total Credits		20.0

Minor in Physics (4.0 credits)

The Minor in Physics is available to students registered in degree programs other than those offered by the

Department of Physics. Careful attention must be paid to prerequisites.

Requirements

1. 0.5 credit from:	0.5
PHYS 1001 [0.5] Foundations of Physics I	
PHYS 1003 [0.5] Introductory Mechanics and Thermodynamics	
PHYS 1007 [0.5] Elementary University Physics I (with a grade of B- or higher)	
2. 0.5 credit from:	0.5
PHYS 1002 [0.5] Foundations of Physics II	
PHYS 1004 [0.5] Introductory Electromagnetism and Wave Motion	
PHYS 1008 [0.5] Elementary University Physics II (with a grade of B- or higher)	
3. 1.0 credit in:	1.0
PHYS 2604 [0.5] Modern Physics I	
PHYS 3701 [0.5] Elements of Quantum Mechanics	
4. 2.0 credits from:	2.0
PHYS 2202 [0.5] Wave Motion and Optics	
PHYS 2305 [0.5] Electricity and Magnetism	
PHYS 2401 [0.5] Thermal Physics	
PHYS 3007 [0.5] Third Year Physics Laboratory: Selected Experiments and Seminars	
PHYS 3207 [0.5] Topics in Biophysics	
PHYS 3308 [0.5] Electromagnetism	
PHYS 3606 [0.5] Modern Physics II	
PHYS 3802 [0.5] Advanced Dynamics	
PHYS 3807 [0.5] Mathematical Physics I	
PHYS at the 4000-level	
Total Credits	4.0

Regulations

In addition to the program requirements described here and academic performance evaluation requirements listed below, students must satisfy the University regulations common to all undergraduate students (see the Academic Regulations section of this Calendar).

Students should consult with the School of Mathematics and Statistics when planning their program and selecting courses.

Academic Continuation Evaluation

Academic Continuation Evaluation for Bachelor of Mathematics

The standard procedures for Academic Continuation Evaluation (ACE) are followed with the following additions:

The status *Eligible to Continue* (EC) at any Academic Continuation Evaluation requires that the CGPA over the following courses be at least 7.0 for Honours programs and at least 5.0 for 15-credit programs:

MATH 1007 [0.5] Elementary Calculus I	
or MATH 1004 [0.5] Calculus for Engineering or Physics	
MATH 1107 [0.5] Linear Algebra I	
or MATH 1104 [0.5] Linear Algebra for Engineering or Science	
MATH 2007 [0.5] Elementary Calculus II	

or MATH 1005 [0.5] Differential Equations and Infinite Series for Engineering or Physics

MATH 2107 [0.5] Linear Algebra II

See the Academic Regulations of the University section of the Calendar for additional information.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

- 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

- 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
- 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element

or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits

ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface
GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
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PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5]	Education Research in Biology
CHEM 1003 [0.5]	The Chemistry of Food, Health and Drugs
CHEM 1004 [0.5]	Drugs and the Human Body
CHEM 1007 [0.5]	Chemistry of Art and Artifacts
ERTH 1010 [0.5]	Our Dynamic Planet Earth
ERTH 1011 [0.5]	Evolution of the Earth
ERTH 2415 [0.5]	Natural Disasters
ISCI 1001 [0.5]	Introduction to the Environment
ISCI 2000 [0.5]	Natural Laws
ISCI 2002 [0.5]	Human Impacts on the Environment
MATH 0107 [0.5]	Algebra and Geometry
PHYS 1901 [0.5]	Planetary Astronomy
PHYS 1902 [0.5]	From our Star to the Cosmos
PHYS 1905 [0.5]	Physics Behind Everyday Life
PHYS 2903 [0.5]	Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5]	Introduction to Computational Thinking for Arts and Social Science Students
MATH 0005 [0.5]	Precalculus: Functions and Graphs
MATH 0006 [0.5]	Precalculus: Trigonometric Functions and Complex Numbers
MATH 1009 [0.5]	Mathematics for Business
MATH 1119 [0.5]	Linear Algebra: with Applications to Business
MATH 1401 [0.5]	Elementary Mathematics for Economics I
MATH 1402 [0.5]	Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database.

Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.Sc. Honours Physics, Applied Physics: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Completion of 5.0 or more credits at Carleton University;
2. Registered as a full-time student in the Bachelor of Science Honours degree program;
3. Obtained and maintained a major CGPA of 8.0 or higher and an overall CGPA of 6.50 or higher

B.Sc. Honours Physics and Applied Physics students must successfully complete three (3) work terms to obtain the co-op designation.

Co-op Work Term Course: PHYS 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	*W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	*W/S	Winter	S
Summer	**O/W	Summer	*W	Summer	O/W	Summer	O/W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- Bachelor of Mathematics (B. Math.) (Honours)
- Bachelor of Mathematics (B.Math.)

Admission Requirements

B.Math Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

The overall admission cut-off average and/or the prerequisite course average may be considerably higher than the stated minimum requirements for admission to the combined B.Math./M.Sc. in Mathematics or Statistics.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

B.Math

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions, and Calculus and Vectors.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Mathematics Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market (and thus the availability of co-op placement) may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Physics (PHYS) Courses

PHYS 1001 [0.5 credit]

Foundations of Physics I

This calculus-based course on classical mechanics covers kinematics, dynamics, gravitation, and oscillatory motion. This is a specialist course for students intending to take further courses in physics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, BIT 1203, PHYS 1003, PHYS 1007.

Prerequisite(s): Grade 12 Mathematics: Advanced Functions and Grade 12 Mathematics: Calculus and Vectors or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently); or permission of the Physics Department. Grade 12 Physics is strongly recommended.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1002 [0.5 credit]

Foundations of Physics II

An introduction to electricity, magnetism, electromagnetic fields, and wave motion. This is a specialist course for students intending to take further courses in physics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1004, PHYS 1008.

Prerequisite(s): PHYS 1001, or PHYS 1003, or PHYS 1007 with a grade of B-; MATH 1004 or MATH 1002 (may be taken concurrently) or MATH 2052 (may be taken concurrently); or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1003 [0.5 credit]**Introductory Mechanics and Thermodynamics**

Mechanics, gravitation, oscillations, and thermodynamics. The application of calculus to solve problems in these areas of physics is introduced. This course is intended for students in the physical sciences and engineering.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1007.

Prerequisite(s): Grade 12 Physics or equivalent, plus Grade 12 Mathematics: Advanced Functions or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently). Note that Grade 12 Mathematics: Calculus and Vectors is strongly recommended.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1004 [0.5 credit]**Introductory Electromagnetism and Wave Motion**

This calculus-based course introduces potential energy, work, electricity, magnetism, oscillations and waves.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1008.

Prerequisite(s): MATH 1004, ECOR 1101 or ECOR 1053 or (ECOR 1045 and ECOR 1046)(The ECOR courses may be taken concurrently) or PHYS 1001 or PHYS 1003 or PHYS 1007 (a grade of at least B- is required for PHYS 1007), or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1007 [0.5 credit]**Elementary University Physics I**

Mechanics, properties of matter, thermodynamics.

Applications chosen in part from the life sciences. For students who lack the prerequisites for PHYS 1001 or PHYS 1003, or who do not intend to take upper-year courses in physics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1003.

Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent, or MATH 0107 (may be taken concurrently); or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 (may be taken concurrently; or (iii) permission of the Physics Department.

Lectures three hours a week, laboratory or tutorial three hours per week.

PHYS 1008 [0.5 credit]**Elementary University Physics II**

Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics. Applications chosen in part from the life sciences.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1004.

Prerequisite(s): PHYS 1001 or PHYS 1003 or PHYS 1007.

Lectures three hours a week, laboratory or tutorial three hours per week.

PHYS 1901 [0.5 credit]**Planetary Astronomy**

Description of the known stellar, galactic and extra-galactic systems together with the instruments used to study them. Modern ideas concerning the structure, origin and evolution of our own planet. Formation of the Moon - Earth system. Study of the planets in our solar system.

Precludes additional credit for PHYS 2203.

Lectures two and one-half hours a week.

PHYS 1902 [0.5 credit]**From our Star to the Cosmos**

Starting with the Sun, the course studies its composition and source of power, then compares our Sun with the other stars in the galaxy and beyond. Modern ideas concerning the structure, origin and evolution of the universe, pulsars and supernovae are examined.

Precludes additional credit for PHYS 2203.

Lectures two and one-half hours a week.

PHYS 1905 [0.5 credit]**Physics Behind Everyday Life**

Examination of the physics behind everyday life. Topics may include transportation, sports, weather and climate, electricity, and sustainable energy. No science background is required. Faculty of Science students may only take this course as a free elective.

Includes: Experiential Learning Activity

Online Course.

PHYS 2004 [0.5 credit]**Modern Physics for Engineers**

Introduction to aspects of modern physics relevant to engineering. Thermal radiation. Concepts of relativistic kinematics. Wave-particle duality. Elements of quantum mechanics. Optical and x-ray spectra, lasers. Nuclear physics and applications. Condensed matter physics.

Precludes additional credit for PHYS 2604.

Prerequisite(s): PHYS 1002 or PHYS 1004 or PHYS 1008 with a grade of B- or better, plus MATH 1004 and MATH 1104 or equivalent. Restricted to B.Eng. students not in the Engineering Physics program. Students in programs other than B.Eng. must obtain permission of the Department.

Lectures three hours a week.

PHYS 2101 [0.5 credit]**Mechanics and Properties of Matter**

Equations of motion for a single particle. Harmonic oscillation. Noninertial reference frames. Orbits in a central force field. Motion of systems of particles and of rigid bodies. Introduction to special relativity. Laboratory experiments in classical mechanics and properties of matter.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall average of B- or better; MATH 1004 and MATH 1104, or MATH 1002 and MATH 1102.

Lectures three hours a week, laboratory three hours a week, tutorials (optional) once a week.

PHYS 2202 [0.5 credit]**Wave Motion and Optics**

Geometrical optics. Types of waves, vibrating string and the classical wave equation. General solutions for traveling waves. Superposition and interference, coherence, wave packets, waves in 2 and 3 dimensions. Propagation of electromagnetic waves. Light and physical optics, oscillator model for dispersion, diffraction, polarization, and refraction.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1104 or MATH 1102 or MATH 2152, and MATH 2004 or MATH 2000 (MATH 2000 may be taken concurrently).

Lectures three hours a week, laboratory three hours a week.

PHYS 2203 [0.5 credit]**Astronomy**

The observational basis of astronomy. The history of astronomy, properties of light, solar system observations and stellar astronomy.

Precludes additional credit for PHYS 1901 and PHYS 1902.

Prerequisite(s): PHYS 1002 or PHYS 1004 or permission of the department. PHYS 1008 with a grade of B- or better may also be used if MATH 1004 or MATH 1007 or MATH 1002 or MATH 2052 have been successfully completed.

Lectures three hours a week.

PHYS 2305 [0.5 credit]**Electricity and Magnetism**

Electrostatic field and potential, Gauss' law. Properties of conductors. Magnetic effects from currents. Motion of charges in electric and magnetic fields. Energy in electric and magnetic fields. Electromagnetic induction. Maxwell's equations in vacuum using vector differential and integral calculus.

Prerequisite(s): PHYS 1001, PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or higher; MATH 2004 or MATH 2000 (MATH 2000 may be taken concurrently). Lectures three hours a week.

PHYS 2306 [0.5 credit]**Physics of Electrical and Electronic Measurements I**

D.C. and A.C. circuit theory. Resonant circuits. Basic measuring devices, the oscilloscope; impedances, bandwidth, noise; vacuum tubes, transistors, useful approximations for circuit design; feedback, amplifiers, oscillators; operational circuits; digital circuits. Lectures emphasize the physical basis of instrument design. Laboratory emphasizes modern digital instrumentation.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1001, PHYS 1002 or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or better.

Lectures three hours a week, laboratory three hours a week.

PHYS 2401 [0.5 credit]**Thermal Physics**

Introduction to thermodynamics and statistical mechanics. Temperature and thermodynamic equilibrium. Work, internal energy and heat; first law. Kinetic theory of gases. Basic probability theory. Microscopic states and entropy. Absolute temperature, reversibility and the second law of thermodynamics. Thermodynamic processes and applications.

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B-); plus MATH 1004 and MATH 1104 or MATH 1002 (no longer offered) and MATH 1102 (no longer offered), or MATH 2052 and MATH 2152.

Lectures three hours a week.

PHYS 2604 [0.5 credit]**Modern Physics I**

The course is designed to provide a logical transition from classical to modern physics. Special relativity. Rutherford scattering, atomic models. Thermal radiation. Photoelectric effect, Compton scattering. Bohr theory of the hydrogen atom. Atomic energy states, optical spectra, lasers. X-rays. Radioactivity. Quantum Mechanics.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 2004.

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1004 and MATH 1104, or MATH 1002 (no longer offered) and MATH 1102 (no longer offered) or MATH 2052 and MATH 2152.

Lectures three hours a week, laboratory three hours a week.

PHYS 2903 [0.5 credit]**Physics Towards the Future**

From classical phenomena to aspects of modern physics and recent advances. Topics may include light and colour, music and sound, cell phones, the galaxy and beyond.

No science background is required. Faculty of Science students may only take this course as a free elective.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Online course.

PHYS 3007 [0.5 credit]**Third Year Physics Laboratory: Selected Experiments and Seminars**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3008, PHYS 3009.

Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the Department.

Six hours a week.

PHYS 3008 [0.5 credit]**Third Year Physics Laboratory: Selected Experiments and Workshop**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3007, PHYS 3009.

Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the department.

Six hours a week.

PHYS 3009 [0.5 credit]**Third Year Physics Laboratory: Selected Experiments and Seminars with Observational Astronomy**

Students complete a small number of experiments selected from astronomy, astrophysics, modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. At least one astronomy/astrophysics related experiment is required. An exercise on literature searches and student seminars on experimental and numerical methods are included.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3007, PHYS 3008.

Prerequisite(s): PHYS 2202, PHYS 2604 and PHYS 2203 or permission of the Department.

Six hours a week.

PHYS 3207 [0.5 credit]**Topics in Biophysics**

Introduction to biophysics. Random motion of molecules and diffusion; viscosity and the circulatory system; laws of thermodynamics and physical forces responsible for chemical reactions, molecular self-assembly and recognition; enzyme kinetics and molecular machines; nerve impulse and its propagation.

Prerequisite(s): PHYS 2604 or permission of the Department.

Lectures three hours a week, tutorial or seminar one hour a week.

PHYS 3308 [0.5 credit]**Electromagnetism**

Electrostatics field and magnetostatics in the presence of matter. Solving Laplace's and Poisson's equations. Multipole expansions. Vector potential. Faraday's laws of induction; Maxwell's equations in matter. Waves in vacuum and dielectric media, guided waves.

Precludes additional credit for ELEC 3909.

Prerequisite(s): PHYS 2202, PHYS 2604, PHYS 2305, MATH 2004 or MATH 2008, and MATH 3705, or permission of the Department.

Lectures three hours a week.

PHYS 3402 [0.5 credit]**Heat and Thermodynamics**

Zeroth, First, Second and Third Laws of Thermodynamics; enthalpy, Helmholtz and Gibbs functions and the Maxwell relations; phase transitions; thermodynamics of magnetism; cryogenics cooling by Joule-Thompson effect, adiabatic expansion of a gas, adiabatic demagnetization, helium dilution refrigeration; black body radiation; negative temperatures.

Prerequisite(s): PHYS 2101 and PHYS 2305, MATH 2007, MATH 2008, MATH 2107 and MATH 2401 or permission of the Department.

Lectures three hours a week.

PHYS 3606 [0.5 credit]**Modern Physics II**

Elements of condensed matter physics, semiconductors, superconductivity. Elements of nuclear physics, fission, fusion, power generation. Introduction to particle physics. Ionizing radiation: production, interactions, detection. Medical physics: radiation biophysics, cancer therapy, imaging.

Includes: Experiential Learning Activity

Also listed as PHYS 3608.

Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department.

Lectures three hours a week, laboratory two hours a week.

PHYS 3608 [0.5 credit]**Modern Applied Physics**

Elements of condensed matter physics, semiconductors, superconductivity. Modern optics. Elements of nuclear physics, fission, fusion, power generation. Ionizing radiation: production, interactions, detection. Medical physics: radiation biophysics, cancer therapy, imaging.

Includes: Experiential Learning Activity

Also listed as PHYS 3606.

Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department.

Lectures three hours a week, laboratory three hours a week.

PHYS 3701 [0.5 credit]**Elements of Quantum Mechanics**

Analysis of interference experiments with waves and particles; fundamental concepts of quantum mechanics, Schrödinger equation; angular momentum, atomic beams; hydrogen atom; atomic and molecular spectroscopy; Pauli principle; simple applications in the physics of elementary particles.

Prerequisite(s): PHYS 2604, MATH 2000 [1.0] (may be taken concurrently), or MATH 2004 or MATH 2008, and MATH 3705 (may be taken concurrently), or permission of the Department.

Lectures three hours a week.

PHYS 3801 [0.5 credit]**Classical Mechanics**

Introduction to Lagrangian and Hamiltonian mechanics: Poisson brackets, tensors and dyadics; rigid body rotations: introductory fluid mechanics coupled systems and normal coordinates; relativistic dynamics.

Prerequisite(s): PHYS 2101, PHYS 2202, PHYS 2305, MATH 2007, MATH 2008, MATH 2107, MATH 2401 or permission of the Department.

Lectures three hours a week.

PHYS 3802 [0.5 credit]**Advanced Dynamics**

Equations of motion for a single particle. Oscillatory Motion. Lagrangian and Hamiltonian formulations of mechanics. Central force motion. Motion of systems of particles and of rigid bodies.

Prerequisite(s): PHYS 2202, PHYS 2604, and MATH 2004, or permission of the Department.

Lectures three hours a week.

PHYS 3807 [0.5 credit]**Mathematical Physics I**

Boundary Value problems involving curvilinear coordinates; spherical harmonics, Bessel functions, Green's functions. Functions of a complex variable: analytic functions, contour integration, residue calculus. Prerequisites: additional credit for MATH 3007 or MATH 3057. Prerequisite(s): PHYS 2202, MATH 2004, MATH 3705 or permission of the Department.

Lectures three hours a week, tutorial one hour a week.

PHYS 3808 [0.5 credit]**Mathematical Physics II**

Solution of second-order total differential equations by Frobenius' method. Sturm-Liouville theory. Special functions: Legendre, Bessel, Hermite, Laguerre and associated functions. Partial differential equations: method of separation of variables, eigenfunctions and eigenvalues and eigenfunction expansions. Green's function techniques for solving inhomogeneous partial differential equations.

Prerequisites: additional credit for MATH 3004, MATH 3008, MATH 3705, and PHYS 3806.

Prerequisite(s): PHYS 3807 or MATH 3007 or permission of the Department.

Lectures three hours a week.

PHYS 3999 [0.0 credit]**Co-operative Work Term Report**

Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Physics Co-operative education option and permission of the Department.

PHYS 4007 [0.5 credit]**Fourth-Year Physics Laboratory: Selected Experiments and Seminars**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 3606 (or PHYS 3608) and registration in the Engineering Physics program. Laboratory, six hours a week.

PHYS 4008 [0.5 credit]**Fourth-Year Physics Laboratory: Selected Experiments and Workshop**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 3007.

Six hours a week.

PHYS 4201 [0.5 credit]**Astrophysics**

Stellar evolution, including stellar modeling, main sequence stars, red giants and the end states of stars such as neutron stars and black holes. Galactic structure and dynamics. Neutrino astrophysics.

Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently).

Also offered at the graduate level, with different requirements, as PHYS 5401, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4202 [0.5 credit]**Cosmology**

Observational evidence for the Big Bang. Cosmological space-time, expansion dynamics and contents of the universe. Physical processes in the expanding universe, inflation, nucleosynthesis, the cosmic microwave background, dark matter, and dark energy.

Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently).

Also offered at the graduate level, with different requirements, as PHYS 5402, for which additional credit is precluded.

Lectures three hours per week.

PHYS 4203 [0.5 credit]**Physical Applications of Fourier Analysis**

Fourier transform, convolution. Sampling theorem.

Applications to imaging: descriptors of spatial resolution, filtering. Correlation, noise power. Discrete Fourier transform, FFT. Filtering of noisy signals. Image reconstruction in computed tomography and magnetic resonance. Laplace transform. Integral transforms, application to boundary value problems.

Prerequisite(s): MATH 3705, or permission of the Department.

Also offered at the graduate level, with different requirements, as PHYS 5313, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4208 [0.5 credit]**Modern Optics**

Electromagnetic wave propagation; reflection, refraction; Gaussian beams, guided waves. Laser theory: stimulated emission, cavity optics, modes, gain and bandwidth; atomic and molecular lasers. Mode locking, Q switching. Diffraction theory, coherence, Fourier optics, holography, laser applications. Optical communication systems, nonlinear effects: devices, fibre sensors, integrated optics.

Prerequisite(s): PHYS 2202, PHYS 3606 (or PHYS 3608), and PHYS 3308 or permission of the Department.

Also offered at the graduate level, with different requirements, as PHYS 5318, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4307 [0.5 credit]**Electromagnetic Radiation**

Electromagnetic wave propagation in a vacuum, dielectrics, conductors, and ionized gases, reflection, refraction, polarization at the plane boundary between two media; waveguide and transmission line propagation; dipole and quadrupole radiation fields; antenna systems. Electromagnetic mass, radiation pressure. Tensor notation, transformation of the electromagnetic fields.

Prerequisite(s): PHYS 3308, PHYS 3801, PHYS 3807 and PHYS 3808 (except for Mathematics and Physics Double Honours students), or permission of the Department.

Lectures three hours a week.

PHYS 4407 [0.5 credit]**Statistical Physics**

Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics are derived, and applied in appropriate physical situations. Fluctuations. Kinetics and transport processes, including the Boltzmann transport equation and some of its applications.

Prerequisite(s): PHYS 3402, PHYS 2602 or PHYS 3601, PHYS 3701 or PHYS 3602, PHYS 4707 (may be taken concurrently); or permission of the Department.

Lectures three hours a week.

PHYS 4409 [0.5 credit]**Thermodynamics and Statistical Physics**

The three Laws of Thermodynamics, enthalpy, Helmholtz and Gibbs functions. Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics.

Precludes additional credit for PHYS 3402 and PHYS 4407.

Prerequisite(s): PHYS 3701 (may be taken concurrently), MATH 2004 and MATH 3705, or permission of the Department.

PHYS 4508 [0.5 credit]**Solid State Physics**

An introduction to solid state physics. Topics include crystal structure, phonons and lattice vibrations, conductors, semiconductors, insulators and superconductivity.

Prerequisite(s): PHYS 3606 or PHYS 3608, and PHYS 3701, or permission of the Department.

Lectures three hours a week.

PHYS 4602 [0.5 credit]**Physics of Elementary Particles**

Standard Model. Properties of leptons, quarks, hadrons. Fundamental interactions: photon, gluons, W/Z bosons. Higgs boson. Conservation laws, invariance principles, quantum numbers. Decay rates and scattering cross-sections. Quantum electrodynamics and chromodynamics. Resonances. Weak interactions, CKM matrix, parity and CP violation. Neutrino masses and oscillations. Future directions.

Prerequisite(s): PHYS 4707 or permission of the Department.

Also offered at the graduate level, with different requirements, as PHYS 5602, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4608 [0.5 credit]**Nuclear Physics**

Ground state properties of nuclei. Nuclear models, binding energy, properties of excited nuclei. Alpha, beta and gamma decay. Passage of radiation through matter, detectors. Nuclear reactions, cross sections, fission, fusion. Elements of neutron physics.

Prerequisite(s): PHYS 3606 or PHYS 3608 or permission of the Department.

Lectures three hours a week.

PHYS 4707 [0.5 credit]**Introduction to Quantum Mechanics I**

The basic interpretative postulates of quantum mechanics; applications of wave mechanics and operator methods to various quantum mechanical systems; quantum mechanical treatment of angular momentum.

Prerequisite(s): PHYS 3701 and PHYS 3807 or equivalent, or permission of the Department.

Lectures three hours a week.

PHYS 4708 [0.5 credit]**Introduction to Quantum Mechanics II**

Scattering theory and application; bound state problems; approximation methods.

Prerequisite(s): PHYS 4707 or permission of the Department.

Lectures three hours a week.

PHYS 4804 [0.5 credit]**Introduction to General Relativity**

Special relativity using tensor analysis. Curved spacetime with physics applications which may include the solar system, stars, black holes and gravitational waves. Introduction to differential geometry and Einstein's field equations.

Prerequisite(s): PHYS 3308, PHYS 3802 and PHYS 3807 or equivalent, or permission of the Department.

Also offered at the graduate level, with different requirements, as PHYS 5804, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4807 [0.5 credit]**Statistical Data Analysis Techniques for Physics**

Computational methods used in analysis of experimental data. Introduction to probability and random variables. Monte Carlo methods for simulation of random processes. Statistical methods for parameter estimation and hypothesis tests. Confidence intervals. Multivariate data classification. Unfolding methods. Examples primarily from particle and medical physics.

Prerequisite(s): third year standing in a physics program and an ability to program in Python, Java, C or C++, and permission of the Department.

Also offered at the graduate level, with different requirements, as PHYS 5002, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4901 [0.5 credit]**Special Topics in Physics**

Each year, at the direction of the Department, a course on a special topic may be offered.

Prerequisite(s): permission of the Department.

PHYS 4907 [0.5 credit]**Fourth-Year Project**

Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.

Project. Fall term only.

PHYS 4908 [0.5 credit]**Fourth-Year Project**

Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.

Project. Winter term only.

PHYS 4909 [1.0 credit]**Fourth-Year Project**

Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.
Project

Political Science

This section presents the requirements for programs in:

- Political Science B.A. Honours
- Political Science B.A. Combined Honours
- Political Science B.A.
- Concentration in Canadian Politics
- Concentration in Comparative Politics and Area Studies (Global North)
- Concentration in Comparative Politics and Area Studies (Global South)
- Concentration in Gender and Politics
- Concentration in International Relations
- Concentration in North American Politics
- Concentration in Political Theory
- Concentration in Public Affairs and Policy Analysis
- Specialization in Global Politics B.G.In.S. Honours
- Stream in Global Politics B.G.In.S.
- Minor in Political Science
- Mention : Français : Political Science
- Washington Center Internship Program

Program Requirements**Course Categories**

The following categories of Political Science courses are used in the program descriptions:

Canadian Government and Politics

PSCI 2002 [0.5]	Canadian Politics and Civil Society
PSCI 2003 [0.5]	Canadian Political Institutions
PSCI 2401 [0.5]	Public Affairs Analysis
PSCI 3000 [0.5]	Canadian Provincial Politics
PSCI 3004 [0.5]	Political Parties and Elections in Canada
PSCI 3005 [0.5]	Ontario Government and Politics
PSCI 3006 [0.5]	Social Power in Canadian Politics
PSCI 3007 [0.5]	Constitutional Politics in Canada
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3401 [0.5]	Canadian Public Administration
PSCI 3402 [0.5]	Canadian Public Policy
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 4003 [0.5]	Politics and the Media

PSCI 4005 [0.5]	Canadian Federalism
PSCI 4006 [0.5]	Legislatures and Representation in Canada
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State
PSCI 4009 [0.5]	Quebec Politics
PSCI 4010 [0.5]	Executive Power in Canadian Politics
PSCI 4107 [0.5]	Political Participation in Canada
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms

Comparative Politics and International Relations

PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 2200 [0.5]	Introduction to U.S. Politics
PSCI 2500 [0.5]	Gender and Politics
PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2602 [0.5]	International Relations: Global Political Economy
PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3102 [0.5]	Politics of Development of China
PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia
PSCI 3105 [0.5]	Imperialism
PSCI 3107 [0.5]	The Causes of War
PSCI 3108 [0.5]	Politics of Popular Culture
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3200 [0.5]	U.S. Constitutional Politics
PSCI 3203 [0.5]	Government and Politics in the Middle East
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3407 [0.5]	Public Opinion and Public Policy
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3601 [0.5]	Theories of International Politics
PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3703 [0.5]	Governing in the Global Economy

PSCI 3801 [0.5]	Environmental Politics
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 3805 [0.5]	Politics of Race
PSCI 4003 [0.5]	Politics and the Media
PSCI 4005 [0.5]	Canadian Federalism
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State
PSCI 4103 [0.5]	The Modern State
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
PSCI 4105 [0.5]	Selected Problems in Development in the Global South
PSCI 4203 [0.5]	Southern Africa After Apartheid
PSCI 4204 [0.5]	Elections
PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
PSCI 4209 [0.5]	Westminster Democracies: Parliaments, Parties and Elections
PSCI 4303 [0.5]	Governmentality and Politics
PSCI 4400 [0.5]	Socio-Technical Change and Public Policy Design
PSCI 4403 [0.5]	Reproductive Rights Policy in North America
PSCI 4409 [0.5]	Issues in Development Management
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area
PSCI 4502 [0.5]	Post-Soviet States and Societies
PSCI 4503 [0.5]	Politics of Central Eurasia
PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin
PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4601 [0.5]	Foreign Policies of Soviet Successor States
PSCI 4603 [0.5]	Analysis of International Political Economy
PSCI 4604 [0.5]	Selected Problems in International Political Economy
PSCI 4605 [0.5]	Gender in International Relations
PSCI 4606 [0.5]	American Foreign Policy
PSCI 4607 [0.5]	Politics of North America
PSCI 4608 [0.5]	European Integration and European Security
PSCI 4609 [0.5]	Selected Topics in European Integration Studies
PSCI 4800 [0.5]	Advanced International Relations Theory
PSCI 4801 [0.5]	Selected Problems in Global Politics
PSCI 4803 [0.5]	Foreign Policies of Major East Asian Powers
PSCI 4805 [0.5]	Political Economy of Global Money and Finance
PSCI 4806 [0.5]	Transatlantic Security Issues
PSCI 4807 [0.5]	Politics of Citizenship and Migration

PSCI 4808 [0.5]	Global Environmental Politics
PSCI 4817 [0.5]	International Politics of Forced Migration
PSCI 4819 [0.5]	Latin America and the World

4000-level Seminar

All courses in the range PSCI 4003 [0.5] to PSCI 4909 [1.0]

Departmental Language Requirement

The Department of Political Science requires Honours students to demonstrate basic proficiency in at least one language other than English, normally French. Honours students are required to demonstrate such proficiency, normally through the completion of 1.0 credit at the 1000-level or higher in one language offered at Carleton.

For students who consider that they already have proficiency in French, the Department of Political Science conducts a French language examination twice a year, in November and February. For students who consider themselves proficient in a second language other than French, arrangements may be made to examine the student in that language, depending on faculty resource availability. Departmental language examinations may not be repeated in case of failure. Students whose high school transcript shows the primary language of instruction to be other than English may apply to have the examination requirement waived. For students in the Canadian concentration, French must be used to satisfy the language requirement.

Political Science

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits)

1. 1.0 credit in:	1.0
PSCI 1100 [0.5]	Democracy in Theory and Practice
& PSCI 1200 [0.5]	Politics in the World
2. 2.0 credits in:	2.0
PSCI 2301 [0.5]	History of Political Thought I
PSCI 2302 [0.5]	History of Political Thought II
PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
3. 1.0 credit in Canadian Government and Politics	1.0
4. 1.0 credit in Comparative Politics and International Relations	1.0
5. 1.0 credit in:	1.0
PSCI 4908 [1.0]	Honours Research Essay (with a grade of B- or better)
or 1.0 credit in 4000-level seminars	
6. 1.0 credit in a 4000-level seminar	1.0
7. 2.0 credits in PSCI at the 3000-level or above or in IPAF 4900 (with permission of the department).	2.0

B. Credits Not Included in the Major CGPA (11.0 credits)

8. 8.0 credits in electives not in PSCI	8.0
9. 3.0 credits in free electives	3.0

C. Additional Requirements

10. Departmental language requirement must be met

Total Credits **20.0**

Notes

1. At least 1.0 credit in 4000-level seminars must be completed at Carleton University.
2. Item 5: candidates with fourth-year Honours standing in Political Science and a Major CGPA of 9.00 or better may present an Honours Research Essay PSCI 4908 [1.0] on some topic involving independent investigation; they may be examined orally on this essay and must receive a grade of B- or better in this course. PSCI 4908 [1.0] must be taken at Carleton University. Students who wish to present an Honours Research Essay must identify a faculty supervisor and require permission of the Supervisor of Undergraduate Studies. Students who do not write an Honours Research Essay are required to complete 1.0 credit in Political Science in the form of one or more 4000-level seminars.

Political Science

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Political Science Major CGPA (7.0 credits)

1. 1.0 credit in: 1.0

PSCI 1100 [0.5] Democracy in Theory and Practice
& PSCI 1200 [0.5] Politics in the World

2. 2.0 credits in: 2.0

PSCI 2301 [0.5] History of Political Thought I

PSCI 2302 [0.5] History of Political Thought II

PSCI 2701 [0.5] Introduction to Research Methods
in Political Science

PSCI 2702 [0.5] Quantitative Research Methods in
Political Science

3. 2.0 credits in courses in Canadian Government and
Politics and/or Comparative Politics and International
Relations, of which at least 1.0 credit is at the 3000-level
or above 2.0

4. 2.0 credits at the 4000-level which may be satisfied by
either: 2.0

a. 2.0 credits in 4000-level PSCI seminars

b. 1.0 credit from 4000-level PSCI seminars and

PSCI 4908 [1.0] Honours Research Essay

B. Additional Credit Requirements (13.0 credits) 13.0

5. The requirements as stated for Combined Honours in
the other discipline must be met

6. Sufficient free electives credits to make a total of 20.0
credits for the program

C. Additional Requirements

7. Departmental language requirement must be met

Total Credits **20.0**

Note: At least 1.0 credit in 4000-level seminars must be
completed at Carleton University.

Political Science

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit in: 1.0

PSCI 1100 [0.5] Democracy in Theory and Practice
& PSCI 1200 [0.5] Politics in the World

2. 1.0 credit from: 1.0

PSCI 2301 [0.5] History of Political Thought I

& PSCI 2302 [0.5] History of Political Thought II

or

PSCI 2701 [0.5] Introduction to Research Methods
& PSCI 2702 [0.5] in Political Science

Quantitative Research Methods in
Political Science

3. 2.0 credits in PSCI at the 2000-level or above 2.0

4. 2.0 credits in PSCI at the 3000-level or above 2.0

B. Credits Not Included in the Major CGPA (9.0 credits)

5. 6.0 credits not in PSCI 6.0

6. 3.0 credits in free electives 3.0

Total Credits **15.0**

Concentrations

The concentrations described below are open to all
students in Political Science programs. The maximum
number of Political Science credits that can be counted
towards the degree is 12.0 credits for the Political Science
B.A. Honours program, 8.0 for the Political Science B.A.
program and 9.0 for the Political Science B.A. Combined
Honours program. Concentrations are open to students
in the Political Science B.A. program, though it may be
difficult to meet the requirements of the Concentrations
within the 15.0 credits required for the degree, so that
courses extra to the primary degree may have to be taken.

Concentration in Canadian Politics (3.5 credits)

1. 1.0 credit in: 1.0

PSCI 2002 [0.5] Canadian Politics and Civil Society
& PSCI 2003 [0.5] Canadian Political Institutions

2. 2.5 credits in Canadian politics, including at least
0.5 credit at the 4000-level for students in honours or
combined honours programs chosen from: 2.5

PSCI 3000 [0.5] Canadian Provincial Politics

PSCI 3004 [0.5] Political Parties and Elections in
Canada

PSCI 3005 [0.5] Ontario Government and Politics

PSCI 3006 [0.5] Social Power in Canadian Politics

PSCI 3007 [0.5] Constitutional Politics in Canada

PSCI 3109 [0.5] The Politics of Law and Morality

PSCI 3401 [0.5] Canadian Public Administration

PSCI 3402 [0.5] Canadian Public Policy

PSCI 3406 [0.5] Public Affairs and Media Strategies

PSCI 3407 [0.5] Public Opinion and Public Policy

PSCI 3606 [0.5] Canadian Foreign Policy

PSCI 3607 [0.5] North American Security and
Defence Policy

PSCI 4003 [0.5] Politics and the Media

PSCI 4005 [0.5] Canadian Federalism

PSCI 4006 [0.5] Legislatures and Representation in
Canada

PSCI 4008 [0.5] National Security and Intelligence
in the Modern State

PSCI 4009 [0.5] Quebec Politics

PSCI 4010 [0.5] Executive Power in Canadian
Politics

PSCI 4107 [0.5]	Political Participation in Canada
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms
PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4209 [0.5]	Westminster Democracies: Parliaments, Parties and Elections
PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4607 [0.5]	Politics of North America
PSCI 4908 [1.0]	Honours Research Essay (with Departmental approval, for qualified Honours students on an accepted Canadian Politics theme)

3. French must be used to satisfy the Departmental language requirement.

Total Credits **3.5**

Concentration in Comparative Politics and Area Studies (Global North) (3.5 credits)

1. 1.0 credit in: **1.0**

PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2102 [0.5]	Comparative Politics of the Global South

2. 2.5 credits in Comparative Politics and Area Studies (Global North), including at least 0.5 credit at the 4000-level, for students in honours or combined honours programs, chosen from:

PSCI 2200 [0.5]	Introduction to U.S. Politics
PSCI 3108 [0.5]	Politics of Popular Culture
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3200 [0.5]	U.S. Constitutional Politics
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3407 [0.5]	Public Opinion and Public Policy
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 3801 [0.5]	Environmental Politics
PSCI 3805 [0.5]	Politics of Race
PSCI 4003 [0.5]	Politics and the Media
PSCI 4103 [0.5]	The Modern State
PSCI 4204 [0.5]	Elections
PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4209 [0.5]	Westminster Democracies: Parliaments, Parties and Elections
PSCI 4303 [0.5]	Governmentality and Politics
PSCI 4403 [0.5]	Reproductive Rights Policy in North America
PSCI 4404 [0.5]	The Design and Evolution of Public Institutions
PSCI 4500 [0.5]	Gender and Globalization

PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area
PSCI 4502 [0.5]	Post-Soviet States and Societies
PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4601 [0.5]	Foreign Policies of Soviet Successor States
PSCI 4606 [0.5]	American Foreign Policy
PSCI 4607 [0.5]	Politics of North America
PSCI 4608 [0.5]	European Integration and European Security
PSCI 4609 [0.5]	Selected Topics in European Integration Studies
PSCI 4807 [0.5]	Politics of Citizenship and Migration
PSCI 4908 [1.0]	Honours Research Essay (with Departmental approval, for qualified Honours students on an accepted Comparative Politics (Global North) theme)

Total Credits **3.5**

Concentration in Comparative Politics and Area Studies (Global South) (3.5 credits)

1. 1.0 credit in: **1.0**

PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2102 [0.5]	Comparative Politics of the Global South

2. 2.5 credits in Comparative Politics and Area Studies (Global South), including at least 0.5 credit at the 4000-level, for students in honours or combined honours programs, chosen from:

PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3102 [0.5]	Politics of Development of China
PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia
PSCI 3105 [0.5]	Imperialism
PSCI 3203 [0.5]	Government and Politics in the Middle East
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 3805 [0.5]	Politics of Race (remove PSCI 3701 - course deleted)
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
PSCI 4105 [0.5]	Selected Problems in Development in the Global South
PSCI 4203 [0.5]	Southern Africa After Apartheid
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
PSCI 4302 [0.5]	Political Thought in the Modern Muslim Middle East
PSCI 4303 [0.5]	Governmentality and Politics
PSCI 4404 [0.5]	The Design and Evolution of Public Institutions

PSCI 4409 [0.5]	Issues in Development Management
PSCI 4503 [0.5]	Politics of Central Eurasia
PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin
PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4803 [0.5]	Foreign Policies of Major East Asian Powers
PSCI 4807 [0.5]	Politics of Citizenship and Migration
PSCI 4817 [0.5]	International Politics of Forced Migration
PSCI 4819 [0.5]	Latin America and the World
PSCI 4908 [1.0]	Honours Research Essay (with Departmental approval, for qualified Honours students on an accepted Comparative Politics and Area Studies (Global South) theme)

Total Credits **3.5**

Concentration in Gender and Politics (3.5 credits)

1. 0.5 credit in: 0.5

PSCI 2500 [0.5]	Gender and Politics
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2. 1.5 credits in Gender and Politics core courses, including at least 0.5 credit at the 4000-level for students in honours or combined honours, chosen from: 1.5

PSCI 3303 [0.5]	Feminist Political Theory
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 4403 [0.5]	Reproductive Rights Policy in North America
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area
PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4605 [0.5]	Gender in International Relations
PSCI 4908 [1.0]	Honours Research Essay (with Departmental approval, for qualified Honours students on an accepted Gender and Politics theme)

3. 1.5 credits in Gender and Politics core and related courses, chosen from the list above, or the following: 1.5

PSCI 3006 [0.5]	Social Power in Canadian Politics
PSCI 3108 [0.5]	Politics of Popular Culture
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3307 [0.5]	Politics of Human Rights

Total Credits **3.5**

Concentration in International Relations (3.5 credits)

1. 1.0 credit in: 1.0

PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2602 [0.5]	International Relations: Global Political Economy

2. 2.5 credits in International Relations, including at least 0.5 credit at the 4000-level, for students in honours or combined honours programs, chosen from: 2.5

PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3105 [0.5]	Imperialism

PSCI 3107 [0.5]	The Causes of War
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3600 [0.5]	International Institutions
PSCI 3601 [0.5]	Theories of International Politics
PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 3801 [0.5]	Environmental Politics
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 4303 [0.5]	Governmentality and Politics
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4601 [0.5]	Foreign Policies of Soviet Successor States
PSCI 4603 [0.5]	Analysis of International Political Economy
PSCI 4604 [0.5]	Selected Problems in International Political Economy
PSCI 4605 [0.5]	Gender in International Relations
PSCI 4606 [0.5]	American Foreign Policy
PSCI 4607 [0.5]	Politics of North America
PSCI 4608 [0.5]	European Integration and European Security
PSCI 4609 [0.5]	Selected Topics in European Integration Studies
PSCI 4800 [0.5]	Advanced International Relations Theory
PSCI 4801 [0.5]	Selected Problems in Global Politics
PSCI 4803 [0.5]	Foreign Policies of Major East Asian Powers
PSCI 4805 [0.5]	Political Economy of Global Money and Finance
PSCI 4806 [0.5]	Transatlantic Security Issues
PSCI 4807 [0.5]	Politics of Citizenship and Migration
PSCI 4808 [0.5]	Global Environmental Politics
PSCI 4817 [0.5]	International Politics of Forced Migration
PSCI 4819 [0.5]	Latin America and the World
PSCI 4908 [1.0]	Honours Research Essay (with Departmental approval, for qualified Honours students on an accepted International Relations theme)

Total Credits **3.5**

Concentration in North American Politics (3.5 credits)

1. 1.0 credit in: 1.0

PSCI 2200 [0.5]	Introduction to U.S. Politics
and	
PSCI 2002 [0.5]	Canadian Politics and Civil Society
or PSCI 2003 [0.5] Canadian Political Institutions	

2. 0.5 credit in United States politics from: 0.5

PSCI 3108 [0.5]	Politics of Popular Culture
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PSCI 3109 [0.5]	The Politics of Law and Morality	
PSCI 3200 [0.5]	U.S. Constitutional Politics	
PSCI 3210 [0.5]	Electoral Politics in the U.S.	
PSCI 3406 [0.5]	Public Affairs and Media Strategies	
PSCI 3407 [0.5]	Public Opinion and Public Policy	
PSCI 4003 [0.5]	Politics and the Media	
PSCI 4606 [0.5]	American Foreign Policy	
3. 0.5 credit in	Canadian politics from:	0.5
PSCI 3000 [0.5]	Canadian Provincial Politics	
PSCI 3004 [0.5]	Political Parties and Elections in Canada	
PSCI 3005 [0.5]	Ontario Government and Politics	
PSCI 3006 [0.5]	Social Power in Canadian Politics	
PSCI 3007 [0.5]	Constitutional Politics in Canada	
PSCI 3108 [0.5]	Politics of Popular Culture	
PSCI 3109 [0.5]	The Politics of Law and Morality	
PSCI 3401 [0.5]	Canadian Public Administration	
PSCI 3402 [0.5]	Canadian Public Policy	
PSCI 3406 [0.5]	Public Affairs and Media Strategies	
PSCI 3407 [0.5]	Public Opinion and Public Policy	
PSCI 3606 [0.5]	Canadian Foreign Policy	
PSCI 4003 [0.5]	Politics and the Media	
PSCI 4005 [0.5]	Canadian Federalism	
PSCI 4006 [0.5]	Legislatures and Representation in Canada	
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State	
PSCI 4009 [0.5]	Quebec Politics	
PSCI 4107 [0.5]	Political Participation in Canada	
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms	

4. 0.5 credit in:		0.5
PSCI 3204 [0.5]	Politics of Latin America	
	or PSCI 3205 [0.5]	Mexican Politics

5. 1.0 credit in	North American politics, from:	1.0
PSCI 3109 [0.5]	The Politics of Law and Morality	
PSCI 3607 [0.5]	North American Security and Defence Policy	
PSCI 4206 [0.5]	Indigenous Politics of North America	
PSCI 4403 [0.5]	Reproductive Rights Policy in North America	
PSCI 4506 [0.5]	Women and Politics in North America	
PSCI 4607 [0.5]	Politics of North America	
PSCI 4905 [0.5]	Washington Center Seminar I	
PSCI 4906 [0.5]	Washington Center Seminar II	

6. For students in honours or combined honours programs, at least 0.5 credit must be at the 4000-level. With Departmental approval, qualified Honours students may substitute PSCI 4908 [1.0], on an accepted North American politics theme, for two elective courses chosen from Items 2, 3 or 4.

Total Credits **3.5**

Concentration in Political Theory (3.5 credits)

1. 1.0 credit in:		1.0
PSCI 2301 [0.5]	History of Political Thought I	
PSCI 2302 [0.5]	History of Political Thought II	

2. 2.5 credits in Political Theory, including at least 0.5 credit at the 4000-level for students in honours or combined honours, chosen from: **2.5**

PSCI 3300 [0.5]	Politics and Literature	
PSCI 3303 [0.5]	Feminist Political Theory	
PSCI 3307 [0.5]	Politics of Human Rights	
PSCI 3308 [0.5]	Modern Political Thought	
PSCI 3309 [0.5]	Modern Ideologies	
PSCI 3311 [0.5]	History of Muslim Political Thought	
PSCI 3312 [0.5]	Enlightenment Political Thought	
PSCI 3709 [0.5]	Ancient and Medieval Political Thought	
PSCI 4302 [0.5]	Political Thought in the Modern Muslim Middle East	
PSCI 4303 [0.5]	Governmentality and Politics	
PSCI 4308 [0.5]	History of Political Enquiry	
PSCI 4309 [0.5]	Contemporary Approaches to Political Enquiry	
PSCI 4311 [0.5]	Political Theories of Democracy and Empire I	
PSCI 4312 [0.5]	Political Theories of Democracy and Empire II	
PSCI 4316 [0.5]	Contemporary Political Theory I	
PSCI 4317 [0.5]	Contemporary Political Theory II	
PSCI 4318 [0.5]	Concepts of Political Community I	
PSCI 4319 [0.5]	Concepts of Political Community II	
PSCI 4908 [1.0]	Honours Research Essay	

Total Credits **3.5**

Concentration in Public Affairs and Policy Analysis (3.5 credits)

1. 0.5 credit in:		0.5
PSCI 2401 [0.5]	Public Affairs Analysis	
2. 3.0 credits in	Public Affairs and Policy Analysis,	3.0
	including at least 0.5 credit at the 4000-level, for students in honours and combined honours programs, chosen from:	
PSCI 3401 [0.5]	Canadian Public Administration	
PSCI 3402 [0.5]	Canadian Public Policy	
PSCI 3405 [0.5]	Comparative Public Policy Analysis	
PSCI 3406 [0.5]	Public Affairs and Media Strategies	
PSCI 3407 [0.5]	Public Opinion and Public Policy	
PSCI 3801 [0.5]	Environmental Politics	
PSCI 4003 [0.5]	Politics and the Media	
PSCI 4005 [0.5]	Canadian Federalism	
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State	
PSCI 4107 [0.5]	Political Participation in Canada	
PSCI 4204 [0.5]	Elections	
PSCI 4400 [0.5]	Socio-Technical Change and Public Policy Design	
PSCI 4403 [0.5]	Reproductive Rights Policy in North America	
PSCI 4404 [0.5]	The Design and Evolution of Public Institutions	
PSCI 4407 [0.5]	Public Policy: Content and Creation	
PSCI 4408 [0.5]	Public Affairs Management and Analysis	
PSCI 4409 [0.5]	Issues in Development Management	

PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4701 [0.5]	Intermediate Polimetrics for Micro Data (Remnove 4602 - no longer offered)
PSCI 4702 [0.5]	Intermediate Research Methods for Applied Political Science
PSCI 4808 [0.5]	Global Environmental Politics
PSCI 4908 [1.0]	Honours Research Essay (satisfies two of six requirements, with Departmental approval, for qualified Honours students on an accepted Public Affairs and Policy Analysis theme)
Total Credits	3.5

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Politics B.G.In.S. Honours (20.0 Credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
GINS 4090 [0.5]	Honours Seminar in Global and International Studies
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0]	International Experience Requirement Preparation
3. 7.5 credits in: the Specialization	7.5
a. 1.5 credits in: Core Courses	
GPOL 1500 [0.5]	Debates in Global Politics
GPOL 2500 [0.5]	Debates in Comparative Politics
GPOL 3000 [0.5]	Themes in Global and Comparative Politics
b. 0.5 credit in: Global Political Economy	
PSCI 2602 [0.5]	International Relations: Global Political Economy
c. 0.5 credit in Political Science at the 2000 level	
PSCI 2002 [0.5]	Canadian Politics and Civil Society
PSCI 2003 [0.5]	Canadian Political Institutions
PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 2200 [0.5]	Introduction to U.S. Politics

PSCI 2401 [0.5]	Public Affairs Analysis
PSCI 2500 [0.5]	Gender and Politics
d. 1.0 credit in: Research Methodologies	
PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
e. 2.5 credits in: Global Politics Internship, or 2.5 credits from Global Politics Electives	
GPOL 3100 [2.5]	Internship in Global Politics
Or	
2.5 credits from: Global Politics Electives	
EURR 2001 [0.5]	Current Issues in European Politics and Society
EURR 2002 [0.5]	Europe and Russia in the World
PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3102 [0.5]	Politics of Development of China
PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia
PSCI 3105 [0.5]	Imperialism
PSCI 3107 [0.5]	The Causes of War
PSCI 3108 [0.5]	Politics of Popular Culture
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3200 [0.5]	U.S. Constitutional Politics
PSCI 3203 [0.5]	Government and Politics in the Middle East
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3407 [0.5]	Public Opinion and Public Policy
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3601 [0.5]	Theories of International Politics
PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 3801 [0.5]	Environmental Politics
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 3805 [0.5]	Politics of Race
f. 1.5 credits from: Honours Seminars and Honours Research Essay	
EURR 4002 [0.5]	Post-Soviet States and Societies

EURR 4003 [0.5]	Social and Political Perspectives in Europe
EURR 4008 [0.5]	Nationalism in Russia and Eurasia
EURR 4100 [0.5]	Nation-Building in Central and Eastern Europe
EURR 4101 [0.5]	The Balkans in Transition – 1918 to 1989
EURR 4104 [0.5]	European Integration and European Security
EURR 4106 [0.5]	Selected Topics in European Integration Studies
EURR 4107 [0.5]	Russia's Regional and Global Ambitions
EURR 4201 [0.5]	Special Topics in European Studies
EURR 4202 [0.5]	Special Topics in Russian and Eurasian Studies
EURR 4204 [0.5]	Central Europe, Past and Present
EURR 4305 [0.5]	Imperial Russia and the Russian Revolution
EURR 4306 [0.5]	The Soviet Union: Power and Culture
GINS 4908 [1.0]	Honours Research Essay (topic in Global Politics)
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State
PSCI 4103 [0.5]	The Modern State
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice
PSCI 4105 [0.5]	Selected Problems in Development in the Global South
PSCI 4203 [0.5]	Southern Africa After Apartheid
PSCI 4204 [0.5]	Elections
PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa
PSCI 4209 [0.5]	Westminster Democracies: Parliaments, Parties and Elections
PSCI 4303 [0.5]	Governmentality and Politics
PSCI 4400 [0.5]	Socio-Technical Change and Public Policy Design
PSCI 4403 [0.5]	Reproductive Rights Policy in North America
PSCI 4407 [0.5]	Public Policy: Content and Creation
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area
PSCI 4502 [0.5]	Post-Soviet States and Societies
PSCI 4503 [0.5]	Politics of Central Eurasia
PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin
PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4601 [0.5]	Foreign Policies of Soviet Successor States
PSCI 4603 [0.5]	Analysis of International Political Economy
PSCI 4604 [0.5]	Selected Problems in International Political Economy
PSCI 4605 [0.5]	Gender in International Relations

PSCI 4606 [0.5]	American Foreign Policy
PSCI 4607 [0.5]	Politics of North America
PSCI 4608 [0.5]	European Integration and European Security
PSCI 4609 [0.5]	Selected Topics in European Integration Studies
PSCI 4800 [0.5]	Advanced International Relations Theory
PSCI 4801 [0.5]	Selected Problems in Global Politics
PSCI 4803 [0.5]	Foreign Policies of Major East Asian Powers
PSCI 4805 [0.5]	Political Economy of Global Money and Finance
PSCI 4806 [0.5]	Transatlantic Security Issues
PSCI 4807 [0.5]	Politics of Citizenship and Migration
PSCI 4817 [0.5]	International Politics of Forced Migration

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits **20.0**

Stream in Global Politics

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Core Courses	
GPOL 1500 [0.5]	Debates in Global Politics
GPOL 2500 [0.5]	Debates in Comparative Politics
GPOL 3000 [0.5]	Themes in Global and Comparative Politics
b. Global Political Economy	
PSCI 2602 [0.5]	International Relations: Global Political Economy
c. Political Science at the 2000 level	
PSCI 2002 [0.5]	Canadian Politics and Civil Society
PSCI 2003 [0.5]	Canadian Political Institutions
PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 2200 [0.5]	Introduction to U.S. Politics
PSCI 2401 [0.5]	Public Affairs Analysis
PSCI 2500 [0.5]	Gender and Politics

d. Research Methodologies	
PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
e. Global Politics Electives	
EURR 2001 [0.5]	Current Issues in European Politics and Society
EURR 2002 [0.5]	Europe and Russia in the World
PSCI 3100 [0.5]	Politics of Development in Africa
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3102 [0.5]	Politics of Development of China
PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia
PSCI 3105 [0.5]	Imperialism
PSCI 3107 [0.5]	The Causes of War
PSCI 3108 [0.5]	Politics of Popular Culture
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3200 [0.5]	U.S. Constitutional Politics
PSCI 3203 [0.5]	Government and Politics in the Middle East
PSCI 3204 [0.5]	Politics of Latin America
PSCI 3205 [0.5]	Mexican Politics
PSCI 3206 [0.5]	European Democracies
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3208 [0.5]	Politics in Russia and Ukraine: Power and Contestation
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3307 [0.5]	Politics of Human Rights
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 3407 [0.5]	Public Opinion and Public Policy
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 3600 [0.5]	International Institutions
PSCI 3601 [0.5]	Theories of International Politics
PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 3700 [0.5]	Government and Politics of South Asia
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3703 [0.5]	Governing in the Global Economy
PSCI 3801 [0.5]	Environmental Politics
PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 3805 [0.5]	Politics of Race
B. Credits Not Included in the Major CGPA (7.0 credits)	
3. 7.0 credits in:	Free Electives 7.0
c. Additional Requirements	
4. The Language Requirement must be met.	
Total Credits	15.0

Minor in Political Science (4.0 credits)

The Minor in Political Science is not available to students enrolled in the B.A. Honours programs in Global Politics or the B.G.In.S. Specialization or Stream in Global Politics.

Requirements:

1. 1.0 credit from:	1.0
PSCI 1100 [0.5]	Democracy in Theory and Practice & PSCI 1200 [0.5]
PSCI 1200 [0.5]	Politics in the World
2. 1.0 credit in PSCI at the 2000-level	1.0
3. 1.0 credit in PSCI at the 2000-level or above	1.0
4. 1.0 credit in PSCI at the 3000-level or above	1.0
5. The remaining requirements of the major discipline(s) and degree must be satisfied.	

Total Credits 4.0

Mention : Français: Political Science (4.0 credits)

Students who wish to qualify for the *Mention : Français* notation in Political Science may do so by taking the following pattern of courses in their degree program:

Requirements

1. 1.0 credit in the advanced study of the French language (a minimum of):	1.0
FREN 1100 [1.0]	French 3
2. 1.0 credit in:	1.0
FREN 2202 [0.5]	Introduction aux études littéraires 1 & FREN 2203 [0.5]
FREN 2203 [0.5]	Introduction aux études littéraires 2
3. 1.0 credit in:	1.0
PSCI 3900 [1.0]	Études dirigées
4. Honours students are required to take:	1.0
PSCI 4909 [1.0]	Mémoire de recherche

Note: With the prior approval of the department, students may substitute appropriate courses taught in French at the University of Ottawa, or courses taken at a francophone university on a Letter of Permission for Items 3 and 4 above.

Washington Center Internship Program (2.5 credits)

The Washington Center Internship Program is open to Honours or Combined Honours Political Science students in the third year or the first term of fourth year. Admission is open to students with at least a 9.5 GPA in Political Science. Successful completion of the program satisfies the requirements for one term of full-time study (2.5 credits). Students spend one term (fall, winter or summer) in Washington D.C. They serve four days a week as an intern in Washington D.C. and also take two seminar courses offered by faculty of The Washington Center. The normal 2.5 credit course load for participants in the programme is:

PSCI 3905 [1.5]	Washington Center Internship	1.5
PSCI 4905 [0.5]	Washington Center Seminar I	0.5
PSCI 4906 [0.5]	Washington Center Seminar II	0.5

Total Credits 2.5

Full information on the program and application forms can be obtained from the Department of Political Science.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies,

Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Political Science: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the second year of the Bachelor of Arts Honours -Political Science program;
2. Obtained and maintained an overall CGPA of 9.00.

Students in B.A. Honours Political Science must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term course: PSCI 3999
Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Term	Pattern
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern		
Fall	S	Fall	S	Fall	W	Fall	W/S		
Winter	S	Winter	S	Winter	S	Winter	W		
Summer		Summer	W/S	Summer	W/S	Summer	S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Political Science (PSCI) Courses

PSCI 1100 [0.5 credit]

Democracy in Theory and Practice

Introduction to modern political ideas such as liberty, equality, the rule of law, representation, participation (including gender aspects), the impact of these ideas on political and policy making institutions in Canada; other countries may be examined. Basic research and academic writing skills.

Precludes additional credit for PSCI 1000 (no longer offered), PSCI 1001 (no longer offered), and PSCI 1003 (no longer offered).

Lectures two hours a week, tutorials one hour a week.

PSCI 1200 [0.5 credit]

Politics in the World

Compares politics in selected states and world regions, including political institutions and cultures, development, public policy making, and gender. Global issues and international relations among states, international organizations, and other actors. Basic research and academic writing skills.

Precludes additional credit for PSCI 1000 (no longer offered), PSCI 1002, GPOL 1000 (no longer offered) and GPOL 1500.

Lectures two hours a week, tutorials one hour a week.

PSCI 1500 [0.5 credit]

Technology, Nature, Power

Social media, self-driving cars, genetic manipulation: technology is transforming both the human experience and the natural world. This course explores interactions among technological change, the evolution of social and political order, and the transformation of the environment (for example, with climate change).

Lectures two hours a week.

PSCI 1501 [0.5 credit]

Politics of Migration

Introduction to concepts and theories that help explain the complex phenomenon of human migration, including the social and political relevance of different types of migration to Canada and in other regions and the political responses to migration and mobility today.

Lectures two hours a week, tutorials one hour a week.

PSCI 2002 [0.5 credit]

Canadian Politics and Civil Society

An examination of the cultural, social, and economic context of Canadian politics, including interest groups and social movements, regionalism, language, ethnicity, and gender.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2003 [0.5 credit]

Canadian Political Institutions

An examination of Canadian political institutions, including federalism, Parliament, the constitution, political parties and the electoral system.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2101 [0.5 credit]

Comparative Politics of the Global North

Domestic politics in states of the Global North.

Comparison of political and economic regimes, political institutions, actors, political processes and cultures, and patterns of public policy making.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2102 [0.5 credit]

Comparative Politics of the Global South

Introduction to domestic politics in post-colonial and developing states of the Global South. Topics may include nationalism, authoritarianism, economic development, revolution, democratization, and the politics of gender, religion, and ethnicity.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2200 [0.5 credit]**Introduction to U.S. Politics**

An examination of several important aspects of the U.S. political system, including separation of powers, checks and balances, and federalism.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorial one hour a week.

PSCI 2301 [0.5 credit]**History of Political Thought I**

Study of the foundations of democracy, law, and political regimes, within a broader reflection on virtue and the good life in Western classical political thought. Course may include texts by Sophocles, Thucydides, Plato, Aristotle, Augustine, Aquinas, de Pizan, and others.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2302 [0.5 credit]**History of Political Thought II**

Study of the emergence, transformations, uses, and meanings of modern political concepts such as liberty, legitimacy, equality, rights, sovereignty, authority, and the state through the interpretation of Western political thinkers such as Machiavelli, Hobbes, Locke, Rousseau, Hume, Wollstonecraft, Marx, Mill and others.

Prerequisite(s): PSCI 2301 or permission of the department.

Lectures two hours a week, tutorials one hour a week.

PSCI 2401 [0.5 credit]**Public Affairs Analysis**

Introduction to central concepts and processes involved in public affairs. Exploration of public issues, policy approaches and decision-making structures using theoretical, empirical and applied approaches.

Precludes additional credit for PSCI 2400 (no longer offered).

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2500 [0.5 credit]**Gender and Politics**

Introduction to gender and politics of diversity, including how feminist activism and organizing finds expression in the political process and structures of representation such as political parties, legislatures and the state.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2601 [0.5 credit]**International Relations: Global Politics**

Introduction to theories, concepts and issues in global politics. Topics may include conflict and intervention, peace and security, international institutions, norms and ethics, human rights, gender, culture, and globalization.

Precludes additional credit for GPOL 1000 (no longer offered), GPOL 1500.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2602 [0.5 credit]**International Relations: Global Political Economy**

Introduction to the international political economy.

Topics may include contemporary changes in the global political economy, multinational corporations, foreign economic policy, global and regional economic institutions, environmental issues, international development and relations between rich and poor countries.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2701 [0.5 credit]**Introduction to Research Methods in Political Science**

Introduction to the logic and design of research.

Measurement and inference in qualitative and quantitative political science.

Precludes additional credit for PSCI 2700 (no longer offered).

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2702 [0.5 credit]**Quantitative Research Methods in Political Science**

The logic and methods of the quantitative study of politics, with emphasis on the application and interpretation of statistical techniques for data analysis. Students are strongly encouraged to take this course the same year as PSCI 2701.

Includes: Experiential Learning Activity

Precludes additional credit for ENST 2006, GEOG 2006, PSCI 2700 (no longer offered).

Prerequisite(s): PSCI 2701 or permission of the Department.

Lectures two hours a week, tutorials one hour a week.

PSCI 3000 [0.5 credit]**Canadian Provincial Politics**

A comparative examination of the nature of Canadian provincial politics. Topics include: political culture, history, party systems, electoral systems and voting behaviour.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3004 [0.5 credit]**Political Parties and Elections in Canada**

The evolution of the party system, the growth of major and minor party movements and the electoral process in Canada.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3005 [0.5 credit]**Ontario Government and Politics**

A survey of the political process and political institutions in Ontario.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3006 [0.5 credit]**Social Power in Canadian Politics**

The role of social forces in the Canadian political process, including interest groups, social movements, elites and classes.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3007 [0.5 credit]**Constitutional Politics in Canada**

The politics of the Canadian constitution. Particular attention to historical and contemporary constitutional reform.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3100 [0.5 credit]**Politics of Development in Africa**

The historical background of African independence, and contemporary struggle for democracy and economic development in Africa.

Prerequisite(s): third-year standing and one of AFRI 1002, GPOL 1000, GPOL 1500, GPOL 2500 or PSCI 2102.

Lectures three hours a week.

PSCI 3101 [0.5 credit]**Politics of War in Africa**

The recurrent crises of war, and political instability in Africa, along with regional and international efforts to resolve them.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3102 [0.5 credit]**Politics of Development of China**

The evolving structures and processes of government in (greater) China with particular emphasis on politics in the People's Republic of China and secondary emphasis on Taiwan and Hong Kong.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3103 [0.5 credit]**State, Society and Economy in Northeast Asia**

The relationship between government structures, society and the economy in Northeast Asia with particular emphasis on Japan and Korea.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3105 [0.5 credit]**Imperialism**

Ideologies, practices, and legacies of western dominance over Asia, Africa, and Latin America. Examines the complexities of imperial control and the colonial relationship from the nineteenth century to present.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3107 [0.5 credit]**The Causes of War**

Alternate theories of the causes of war. Such alternate perspectives as biological, social and comparative historical approaches, including the results of peace research activities of the past two decades.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.

Lectures three hours a week.

PSCI 3108 [0.5 credit]**Politics of Popular Culture**

Examines political themes in popular culture. Cultural media may include film, literature, television, music, cartoons/comics, and the news media. Political themes may include war, ethnicity, nationalism, revolution, citizenship, gender and sexuality.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3109 [0.5 credit]**The Politics of Law and Morality**

Politics of moral regulation in Canada, the United States and other jurisdictions. The treatment in law and public policy of such human rights issues as: capital punishment, sexual orientation, euthanasia, abortion, new reproductive technologies, racial discrimination, religious and equality rights.

Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003 or PSCI 2101.

Lectures three hours a week.

PSCI 3200 [0.5 credit]**U.S. Constitutional Politics**

The central role played by the U.S. Constitution in the country's political life, from the Framers to current controversies. Includes issues of race, class and gender. Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3203 [0.5 credit]**Government and Politics in the Middle East**

The evolution and functioning of political systems in the Middle East region, with emphasis on the problems of political stability, the impact of the West, the role of Islam, and war and peace.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3204 [0.5 credit]**Politics of Latin America**

An overview of the evolution of Latin American political systems, including the impact of the European conquest, democratization, economic liberalization, state-civil society relations, gender politics, revolutionary movements, and relations with the United States.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3205 [0.5 credit]**Mexican Politics**

An introduction to the politics, society and economy of Mexico. Topics include processes of democratization and economic liberalization, human rights, the environment, the role of women, labour, and indigenous peoples, and social policy. Special emphasis on Mexico's role in the North American political economy.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and one of GPOL 1500, GPOL 2500, PSCI 2102 or PSCI 2602.

Lectures three hours a week.

PSCI 3206 [0.5 credit]**European Democracies**

A comparative examination of select controversies over democracy in specific European countries, considered within the context of 20th century historical trends, as well as contemporary political debates.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3207 [0.5 credit]**The Government and Politics of European Integration**

The process of European integration; the European Union and its institutions; core EU policies, challenges to the integration process (e.g. democratic legitimacy, enlargement); theories of European integration.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3208 [0.5 credit]**Politics in Russia and Ukraine: Power and Contestation**

Political development in post-Soviet Russia and Ukraine, including examination of the complicated relationship between the two states. Historical perspectives, institutional context (including federalism) and comparative insights.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3209 [0.5 credit]**Reconstruction and Transformation in Europe and Eurasia**

The politics of dramatic political changes, such as revolution, secession, constitutional revision, and systemic reform. The course will include selected historical and comparative cases from Central and Eastern Europe and the former Soviet Union.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3210 [0.5 credit]**Electoral Politics in the U.S.**

An overview of specific aspects of U.S. electoral politics, including presidential and congressional elections, incumbency, the two-party system, campaign spending limits, the role of the media, and voter turnout.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3300 [0.5 credit]**Politics and Literature**

A study of imaginative prose in which political ideas and/or political settings dominate. Literature as political communication, the impact of literature upon politics, the peculiar value of literature in the study of politics and its shortcomings.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3303 [0.5 credit]**Feminist Political Theory**

Introduction to feminist philosophical responses to sexism, taking into consideration the different waves of feminist discourse. Topics may include the concept of gender; women's diversity and its implications; 'intersectionality'; gender, capitalism and the family; and new approaches to feminist knowledge and feminist agency.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3307 [0.5 credit]**Politics of Human Rights**

Politics of human rights in its historical and cultural context, including: early liberal theories of natural rights; utilitarian and Marxist critiques; contemporary rights debates; different generations of rights; feminism and women's rights; cultural relativism; state sovereignty; and, problems of implementation and enforcement.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3308 [0.5 credit]**Modern Political Thought**

A survey of trends in modern political thought, including some of liberalism, conservatism, neo-conservatism, Marxist and neo-Marxist socialism, communitarianism, postmodernism and globalization.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3309 [0.5 credit]**Modern Ideologies**

A survey of ideologies, mainly since 1900, including some of nationalism, utopian socialism, communism, fascism, populism, environmentalism and feminism.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3310 [0.5 credit]**Global Indigenous Politics**

An overview of regional and international Indigenous politics with case studies from the Americas, Europe, Asia, the Pacific; Africa. Topics include colonization, state formation, decolonial and postcolonial theories, Indigenous movements, the role of the United Nations, land rights, environment, self-determination, development, gender, and sexuality.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3311 [0.5 credit]**History of Muslim Political Thought**

A survey of political thought among Muslims, tracing the emergence and influence of juridical, philosophical and administrative approaches to politics on Muslim civilization.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3312 [0.5 credit]**Enlightenment Political Thought**

Major Enlightenment thinkers and major themes of Enlightenment political thought. Topics may include reason, religion, toleration, liberty, equality, the foundations of political authority, autonomy, morals, taste, progress, history or commerce.

Prerequisite(s): third-year standing.

Lecture three hours a week.

PSCI 3401 [0.5 credit]**Canadian Public Administration**

Study of the institutions and dynamics of government in Canada, with emphasis on political context, administrative reforms, policy development and ongoing challenges. Analysis may include federal, provincial and/or municipal levels of government.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing and one of PSCI 2002, PSCI 2003, PSCI 2401, or PAMP 2000 (no longer offered).

Lectures three hours a week.

PSCI 3402 [0.5 credit]**Canadian Public Policy**

Policy communities and policy networks in Canada with particular attention paid to policy issues, the political environment, policy instruments, impact and outcomes.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003, PSCI 2401, or PAMP 2000 (no longer offered).

Lectures three hours a week.

PSCI 3405 [0.5 credit]**Comparative Public Policy Analysis**

The formation and impact of public policy: a variety of political systems as well as a variety of policy areas. Emphasis on developing skills for the analysis of policy formation and impact.

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2101, PSCI 2400 (no longer offered), PSCI 2401, or PAMP 2001 and PAMP 2002, or PAMP 2000 (no longer offered).

Lectures three hours a week.

PSCI 3406 [0.5 credit]**Public Affairs and Media Strategies**

The public affairs and issue management strategies of corporations, government departments, and other institutions in Canada from a comparative perspective.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3407 [0.5 credit]**Public Opinion and Public Policy**

Theories about the origins and dynamics of public opinion, the ways in which public opinion influences government policy and decision-making, and how decision-makers are able to shape public opinion.

Prerequisite(s): PSCI 2701 and PSCI 2702.

Lectures three hours a week.

PSCI 3410 [0.5 credit]**Introduction to Political Management**

Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.

Also listed as POLM 3000 and COMS 3100.

Prerequisite(s): third-year standing.

Lecture three hours a week.

PSCI 3411 [0.5 credit]**Data Analysis for Governance: Formal Approaches and Practical Realities**

Finding and using data to make, manage and evaluate public policy. Emphasis is on developing data analysis skills, and using and applying substantive theories by working on projects with real-world applications.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2701 and PSCI 2702.

Lectures, discussions, presentations; three hours a week.

PSCI 3502 [0.5 credit]**Gender and Politics: Global South**

A contemporary approach to the role of gender in political systems of the South. Topics may include gender and development, human rights, social policies, globalization, state-civil society relations, political participation and citizenship.

Prerequisite(s): third-year standing and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2102, PSCI 2500 or PSCI 3307.

Lectures three hours a week.

PSCI 3600 [0.5 credit]**International Institutions**

Origins, structure and functioning of international institutions with emphasis on the United Nations as well as regional organizations. Topics include peace and security, international aid and development, human rights and the control of global resources.

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.

Lectures three hours a week.

PSCI 3601 [0.5 credit]**Theories of International Politics**

Examination of the major theoretical approaches to the study of international politics. Topics may include realism, liberalism, Marxism, constructivism, feminism, and poststructuralism.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.

Lectures three hours a week.

PSCI 3603 [0.5 credit]**Strategic Thought and International Security**

The ideas of classical and contemporary strategic thinkers. International security issues and concepts.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3606 [0.5 credit]**Canadian Foreign Policy**

The traditions, domestic influences, objectives, capabilities, and decision-making processes, and analysis of selected contemporary issues.

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2002, PSCI 2003, PSCI 2601 or PSCI 2602.

Lectures three hours a week.

PSCI 3607 [0.5 credit]**North American Security and Defence Policy**

The evolution of Canadian and U.S. security and defence policy as it pertains to North America. Contemporary issues and development.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3608 [0.5 credit]**Migration Governance**

Advanced introduction to the politics of human mobility and migration, including attempts by states and other actors to influence migration and mobility and emerging types of governance at the national, regional and global levels.

Prerequisite(s): third-year standing or permission of the Department.

Lecture three hours a week.

PSCI 3609 [0.5 credit]**Global Politics of Food**

Drawing on theories of international relations, political economy, and public policy-making, this course examines the global, national and local politics of food production and distribution. Topics include food security, free trade versus fair trade, the environmental sustainability of food systems, food sovereignty and food aid.

Prerequisite(s): third-year standing or permission of the Department.

Lecture three hours a week.

PSCI 3700 [0.5 credit]**Government and Politics of South Asia**

Patterns of colonialism, evolving political regimes and issues in development and foreign policy in the countries of South Asia, including India, Pakistan, Bangladesh, Sri Lanka, and other member states of SAARC.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2102.

Lectures three hours a week.

PSCI 3702 [0.5 credit]**Israeli-Palestinian Relations**

The origins and evolution of the Israeli-Palestinian conflict and peace process.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.

Lectures three hours a week.

PSCI 3703 [0.5 credit]**Governing in the Global Economy**

The main approaches and policy issues in the political economy of advanced industrialized states. The relationship between state and market and the ways in which national states have responded to the pressures of governing in an increasingly interdependent global economy.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2602.

Lectures three hours a week.

PSCI 3709 [0.5 credit]**Ancient and Medieval Political Thought**

The significance for political theory of the ancient and medieval controversies over nature/convention, power/knowledge, time/eternity, theory/practice, and science/mysticism. Thinkers such as Homer, the pre-Socratics, Plato and Aristotle, the neo-Platonists, Augustine, and the Scholastics.

Prerequisite(s): (PSCI 2301 and PSCI 2302) or permission of the Department.

Lectures three hours a week.

PSCI 3801 [0.5 credit]**Environmental Politics**

Environmental issues in contemporary political argument. Topics include: environmental movements and green parties, environmental ethics and animal rights, economic approaches to environmental management, the politics of sustainable development, and the international politics of the environment.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3802 [0.5 credit]**Globalization and Human Rights**

An examination of the various dimensions and meanings of globalization and its relationship with human rights. The main emphasis will be on the implications of the emerging global economy for economic, social, political and cultural rights.

Also listed as SOCI 3027, ANTH 3027.

Prerequisite(s): third-year standing and one of:

GPOL 1500, SOCI 1010 [1.0], ANTH 1003[1.0], ANTH 1010[1.0], ISSC 1001[1.0], PSCI 2601, PSCI 2602, LAWS 2105, PHIL 2103 or (ANTH 1001 and ANTH 1002), or (SOCI 1001 and SOCI 1002).

Lectures three hours a week.

PSCI 3805 [0.5 credit]**Politics of Race**

The meaning, sources and practice of racialism, as well as efforts to combat it, in a comparative context. Case studies will include South Africa, the United States, and Canada.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3809 [0.5 credit]**Selected Topics in Political Science**

A lecture course on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3900 [1.0 credit]**Études dirigées**

Une programme de lectures choisies et de travaux écrits dans le domaine de spécialisation d'un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.

Prerequisite(s): third-year standing in the Political Science Mention : Français program.

PSCI 3905 [1.5 credit]**Washington Center Internship**

One-term internship at The Washington Center in D.C.; options in American politics, international affairs, and other areas. Evaluation by Washington Center faculty, but governed by Carleton University Political Science Department regulations. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210 and permission of the department.

PSCI 3906 [1.0 credit]**Full-Year Political Science Internship**

Internship gives students the opportunity to work with an organization whose focus relates to politics over a full academic year. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision.

Includes: Experiential Learning Activity

Precludes additional credit for GPOL 3100, PSCI 3907 and the Washington Internship.

Prerequisite(s): third-year Honours standing with a minimum Political Science CGPA of 9.0 or permission of the Department.

PSCI 3907 [0.5 credit]**One-Term Political Science Internship**

Internship gives students the opportunity to work with an organization whose focus relates to politics over one academic term. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision.

Includes: Experiential Learning Activity

Precludes additional credit for GPOL 3100, PSCI 3906 and the Washington Internship.

Prerequisite(s): third-year Honours Standing with a minimum Political Science CGPA of 9.0 or permission of the Department.

PSCI 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

PSCI 4003 [0.5 credit]**Politics and the Media**

The role of the mass media in the Canadian political system from a comparative perspective.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4005 [0.5 credit]**Canadian Federalism**

The evolution and contemporary operation of the Canadian federal system; the social, political, economic, and structural features underlying its operational performance, resilience in crisis, and potential for adaptation.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, PSCI 2003 or PSCI 2101.

Also offered at the graduate level, with different requirements, as PSCI 5101, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4006 [0.5 credit]**Legislatures and Representation in Canada**

The role of Parliament and of the individual M.P. in terms of policy making, party discipline, and differing conceptions of representation.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5006, for which additional credit is precluded.

Seminar three hours per week.

PSCI 4008 [0.5 credit]**National Security and Intelligence in the Modern State**

The state's response to foreign espionage, alleged subversion, terrorism, and counterintelligence. Major focus on the Canadian experience, but with extensive use of materials chronicling the practices of KGB, CIA, BIS, ASIO, MOSSAD, etc.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4009 [0.5 credit]**Quebec Politics**

Society, culture, economy and politics in Quebec. Special attention to the politically relevant changes since 1960 and the central place of Quebec within the Canadian federation.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4010 [0.5 credit]**Executive Power in Canadian Politics**

Consideration of prime ministers, premiers, cabinet ministers and senior public service leadership in Canadian politics and government.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5010, for which additional credit is precluded.

PSCI 4103 [0.5 credit]**The Modern State**

A survey of recent thinking about the state in western societies drawing on perspectives such as those of feminists, Marxists, Weberians, poststructuralists and others. Topics may include: the rise of the modern state, economic governance, the public sphere, citizenship, sovereignty and territoriality.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4104 [0.5 credit]**Development in the Global South - Theory and Practice**

Different theoretical approaches to the concept of development in the Global South and their relevance for selected countries in Latin America, Africa and Asia.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4105 [0.5 credit]**Selected Problems in Development in the Global South**

Topics may include global issues of trade, finance and production, changing patterns of foreign aid, and the role of microfinance, mining, non-governmental organizations, migration, anti-poverty programs and activism in promoting development.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4107 [0.5 credit]**Political Participation in Canada**

The causes and implications of political participation by individuals with special reference to Canada. Topics include citizen participation in campaign and party organizations, political protest movements, interest groups, and community associations.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).

Seminar three hours a week.

PSCI 4109 [0.5 credit]**The Politics of the Canadian Charter of Rights and Freedoms**

The genesis and impact of the Charter of Rights and Freedoms. Particular emphasis on the politics of aboriginal, language, and equality rights.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4203 [0.5 credit]**Southern Africa After Apartheid**

The pathology of apartheid, the reasons for its end, and prospects for democratization and development in Southern Africa in the era of globalization.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5203, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4204 [0.5 credit]**Elections**

The conduct and meaning of elections in contemporary states. Attention to the connection of elections to concepts of representation, policy mandates, and political parties, and to electoral systems and referendums.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).

Also offered at the graduate level, with different requirements, as PSCI 5204, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4206 [0.5 credit]**Indigenous Politics of North America**

Issues of governance regarding the original peoples of Canada, Mexico and the United States since the European invasion. Contemporary movements for restoration of cultural, political, socio-economic, land and self-governance rights, emphasizing domestic and international strategies.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2001, PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, or PSCI 3205.

Also offered at the graduate level, with different requirements, as PSCI 5100, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4207 [0.5 credit]**Globalization, Adjustment and Democracy in Africa**

The nature of global pressures in Africa, as states go through political and economic change.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5107, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4209 [0.5 credit]**Westminster Democracies: Parliaments, Parties and Elections**

Examination of party and parliamentary democracy in the five principal Anglophone parliamentary democracies: Australia, Canada, Ireland, New Zealand and the United Kingdom.

Consideration is given to the effects of different electoral systems and institutional arrangements on electoral politics, political participation, and party organization.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 2500, PSCI 2003, PSCI 2101, or PSCI 2102.

Seminar three hours a week.

PSCI 4210 [0.5 credit]**Political Identity through Graphic Novels**

Examination of the sources and dynamics of political identity through the medium of graphic novels and graphic memoirs. Themes may include collective memory, genocide, prostitution, violent conflict, civil rights, race and ethnicity, revolution, Indigenous issues, mental health, and gender and sexuality.

Prerequisite(s): fourth year standing or permission of the Department.

Seminar three hours a week.

PSCI 4211 [0.5 credit]**Op-Ed Writing and Social Media as Political Engagement**

The art and craft of political opinion writing and social-media engagement. An examination of contemporary online activism, interpersonal and collective online dynamics, and an imparting of the skills required for persuasive and well-researched op-ed writing.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4302 [0.5 credit]**Political Thought in the Modern Muslim Middle East**

Contemporary secular and religious responses to the challenges of modernity. Readings include writings of Arab, Turkish, and Iranian intellectuals.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of (PSCI 2301 and PSCI 2302) or PSCI 3311.

Also offered at the graduate level, with different requirements, as PSCI 5305, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4303 [0.5 credit]**Governmentality and Politics**

Examination of Foucault's concept of governmentality and work which has developed this idea, especially the relevance of governmentality for global political studies. Topics may include sovereignty, biopolitics, technopolitics, neoliberalism and citizenship.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5303 and SOCI 5407, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4308 [0.5 credit]**History of Political Enquiry**

An examination of methods adopted by major thinkers in the history of political philosophy, amidst changing understandings of metaphysics and science. Thinkers to be considered may include Plato, Aristotle, Descartes, Bacon, Kant, Hegel, Nietzsche, and Heidegger, among others.

Precludes additional credit for PSCI 4304 (no longer offered).

Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department.

Seminar three hours a week.

PSCI 4309 [0.5 credit]**Contemporary Approaches to Political Enquiry**

An examination of contemporary critiques and developments in modern science and social science.

Thinkers to be considered may include Gadamer, Strauss, Oakeshott, Voegelin, Polanyi, Feuerabend, Heidegger, Kojève, Schmitt, Foucault, and Derrida.

Precludes additional credit for PSCI 4304 (no longer offered).

Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4311 [0.5 credit]**Political Theories of Democracy and Empire I**

An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Thucydides, Plato, Aristotle and Xenophon.

Precludes additional credit for PSCI 4310 (no longer offered).

Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department.

Seminar three hours a week.

PSCI 4312 [0.5 credit]**Political Theories of Democracy and Empire II**

An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Machiavelli, Hobbes, Hegel, Tocqueville and Heidegger.

Precludes additional credit for PSCI 4310 (no longer offered).

Prerequisite(s): fourth-year Honours standing, (PSCI 2301 and PSCI 2302) and PSCI 4311 or permission of the Department.

Seminar three hours a week.

PSCI 4316 [0.5 credit]**Contemporary Political Theory I**

Focus on the main currents of political thought in late and post-modernity; the relation between classical and modern philosophy, tyranny and technology, existentialism and nihilism. Thinkers such as Strauss, Kojève, Nietzsche, Arendt, Heidegger and Schmitt may be read.

Precludes additional credit for PSCI 4305 (no longer offered).

Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department.

Seminar three hours a week.

PSCI 4317 [0.5 credit]**Contemporary Political Theory II**

Continues and expands themes examined in PSCI 4316, and will include post-modernism, investigations of technology and globalization, terrorism and trans-humanism. Representative thinkers may include Derrida, Foucault, Deleuze, Bataille, Rosen, Voegelin, Habermas and Steiner.

Precludes additional credit for PSCI 4305 (no longer offered).

Prerequisite(s): fourth-year Honours standing; PSCI 2301, PSCI 2302 and PSCI 4316, or permission of the Department.

Seminar three hours a week.

PSCI 4318 [0.5 credit]**Concepts of Political Community I**

Critical survey of concepts of political community, including the common good, justice, citizenship, leadership, democracy, and legitimacy, from ancient, modern, and contemporary political theory.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5308, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4319 [0.5 credit]**Concepts of Political Community II**

A continued critical survey of concepts of political community, including the common good, justice, citizenship, statesmanship, democracy, and legitimacy, from ancient, modern, and contemporary political theory. Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4400 [0.5 credit]**Socio-Technical Change and Public Policy Design**

Joint implications of contemporary science, technology and demographics for the design of public policy. The main emphasis of the course will be general patterns of change and design relating to public policy.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4403 [0.5 credit]**Reproductive Rights Policy in North America**

The interaction between social movements, legislatures and courts in formulating reproductive rights policy in Canada, the U.S. and Mexico.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5407, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4404 [0.5 credit]**The Design and Evolution of Public Institutions**

An examination of the emergence, development and collapse of institutional collective action in a broad historical framework, with attention to probable future scenarios for change. Readings are taken from anthropology, economics, history and empirical political theory.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4407 [0.5 credit]**Public Policy: Content and Creation**

The content and creation of public policy. Focus on the explanation, prediction and design of policy. Perspectives and examples are drawn from a variety of frameworks and from both Canadian and non-Canadian contexts.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2400 (no longer offered), PSCI 2401, PSCI 3402, PSCI 3405, PSCI 3409 or PAM 2000 (no longer offered), or PAM 2001 and PAM 2002.

Seminar three hours a week.

PSCI 4408 [0.5 credit]**Public Affairs Management and Analysis**

Theories and practice in the management of public affairs, including the environment and administration of the public sector, public opinion, and public communications.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminars three hours a week.

PSCI 4409 [0.5 credit]**Issues in Development Management**

An examination of the application of organization theory to policy implementation and evaluation for developing and transitional systems, with an emphasis on the role of cultural differences and divergent value systems in development management.

Prerequisite(s): ECON 3508 and fourth-year standing in the B.P.A.P.M. program and registration in either the International Studies specialization or the Development Studies specialization or permission of the Department. Lectures or seminars three hours a week.

PSCI 4500 [0.5 credit]**Gender and Globalization**

How globalization affects women's involvement in politics and how they organize to conceptualize and pursue gender justice in official politics; grass roots projects and cultural transformations; ideology; stand-alone movements; and mixed-sex movements like nationalism and democratization.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 2500, PSCI 3500, PSCI 3502.

Seminars three hours a week.

PSCI 4501 [0.5 credit]**Politics of Identity in Europe and the Russian Area**

The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.

Includes: Experiential Learning Activity

Also listed as EURR 4205.

Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.

Seminar three hours a week.

PSCI 4502 [0.5 credit]**Post-Soviet States and Societies**

The relationship between social forces and state structures at both the national and local levels in the USSR and the post-communist states.

Also listed as EURR 4002.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 3208, PSCI 3209, PSCI 3704, PSCI 3705, or HIST 2600.
Seminar three hours a week.

PSCI 4503 [0.5 credit]**Politics of Central Eurasia**

Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.

Includes: Experiential Learning Activity

Also listed as EURR 4207.

Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4504 [0.5 credit]**Politics of the Caucasus and Caspian Basin**

Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.

Includes: Experiential Learning Activity

Also listed as EURR 4209.

Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4505 [0.5 credit]**Transitions to Democracy**

A comparative analysis of processes of democratization. Diverse theoretical approaches to understanding the timing, causes, nature, and limitations of democratization. Examples from Europe and Russia, Latin America, Africa, and Asia.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2102, PSCI 3100, PSCI 3204, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.

Seminar three hours a week.

PSCI 4506 [0.5 credit]**Women and Politics in North America**

The efforts of women in North America to increase their political role through public activism, including in party organizations, social movements, legislatures, courts and the executive branch of government.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4507 [0.5 credit]**The Balkans since 1989**

Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region.

Also listed as EURR 4102.

Prerequisite(s): fourth year Honours standing or permission of the Department.
Seminar three hours a week.

PSCI 4601 [0.5 credit]**Foreign Policies of Soviet Successor States**

The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.

Also listed as EURR 4208.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3208, PSCI 3209, PSCI 3600, PSCI 3603, PSCI 3703.
Seminar three hours a week.

PSCI 4603 [0.5 credit]**Analysis of International Political Economy**

Various theoretical approaches to the study of the international political economy, with a focus on historical development and changing international structures.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.
Seminar three hours a week.

PSCI 4604 [0.5 credit]**Selected Problems in International Political Economy**

Contemporary problems and issues in the international political economy, with particular attention given to advanced industrial countries.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.
Seminar three hours a week.

PSCI 4605 [0.5 credit]**Gender in International Relations**

Analysis of feminist approaches to international relations. Substantive issues include the role of women in war and militarization, the gender dimensions of global political economy and gender issues in international development.

Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3500, PSCI 3303 or PSCI 3502.
Seminars three hours a week.

PSCI 4606 [0.5 credit]**American Foreign Policy**

The sources, trends and conflicting interpretations of the international roles of the United States since World War II. Foreign policy machinery and processes assessed in terms of the relative importance of perceptions, ideology, self-interest, and domestic and foreign pressures.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2101, PSCI 2601, PSCI 2602, PSCI 3200, PSCI 3201, PSCI 3603, PSCI 3703.

Seminar three hours a week.

PSCI 4607 [0.5 credit]**Politics of North America**

A seminar examining the evolving relationship between Canada, the United States and Mexico, including political, economic, social, environmental and defence aspects.

Includes: Experiential Learning Activity

Precludes additional credit for PSCI 5607.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4608 [0.5 credit]**European Integration and European Security**

A seminar focusing on issues related to the formation of supra-national decision-making structures in Europe.

Includes: Experiential Learning Activity

Also listed as EURR 4104.

Prerequisite(s): fourth-year Honours standing or permission of the department.

Also offered at the graduate level, with different requirements, as PSCI 5608, and as EURR 4104/5104, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4609 [0.5 credit]**Selected Topics in European Integration Studies**

A seminar focusing on selected topics related to European integration in the post-World War II period.

Also listed as EURR 4106.

Prerequisite(s): fourth-year Honours standing or permission of the department.

Seminar three hours a week.

PSCI 4610 [0.5 credit]**Politics of Migration Management**

Seminar course that critically engages with innovative policies and instruments under the umbrella of 'migration management', and the proliferation of actors (states, international organizations, NGOs, private companies etc) involved in shaping and contributing to migration governance.

Prerequisite(s): fourth-year Honours standing or permission of the department.

Seminar three hours a week.

PSCI 4701 [0.5 credit]**Intermediate Polimetrics for Micro Data**

Research designs and statistical techniques primarily used in analyzing survey data. Selected topics may vary from year to year. Students doing Honours papers based on micro data are advised to take this course.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5701, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4702 [0.5 credit]**Intermediate Research Methods for Applied Political Science**

Applied methods for policy, politics and public affairs.

Primarily quantitative, but may have qualitative elements.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5702, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4800 [0.5 credit]**Advanced International Relations Theory**

Close reading and analysis of theoretical research in the academic discipline of International Relations; may include analysis of methodology, normative and critical theory, and key theoretical concepts such as anarchy, sovereignty, power, inequality, coloniality, security, gender.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 2602, PSCI 3601, GPOL 3000.

Seminar three hours a week.

PSCI 4801 [0.5 credit]**Selected Problems in Global Politics**

The application of international relations theories to specific global problems, both historical and contemporary. Selected issues may focus on one or more of conflict analysis, terrorism, the environment, migration, globalization and global civil society.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3600, PSCI 3601, PSCI 3603, and PSCI 3703.

Seminar three hours a week.

PSCI 4803 [0.5 credit]**Foreign Policies of Major East Asian Powers**

The foreign policies of the East Asian powers, with special attention to China and Japan; an analysis of the domestic sources of policy, capabilities, interests, decision-making processes and foreign relations.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3102, or PSCI 3103.

Seminar three hours a week.

PSCI 4805 [0.5 credit]**Political Economy of Global Money and Finance**

An exploration of the organization of the global monetary and financial system. Issues covered include the relationship between global finance and the state, the politics of world money, and the problems associated with regulating internationally-active financial institutions.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.

Also offered at the graduate level, with different requirements, as PSCI 5802, for which additional credit is precluded.

Seminars three hours a week.

PSCI 4806 [0.5 credit]**Transatlantic Security Issues**

NATO as a political and military alliance. NATO and 21st century threats. Security roles for the E.U. Broader transatlantic security issues.

Precludes additional credit for PSCI 5803.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 3603, PSCI 3607, or GPOL 1500.

Seminars three hours a week.

PSCI 4807 [0.5 credit]**Politics of Citizenship and Migration**

How flows of people -- migrants, temporary workers and refugees -- challenge state sovereignty, citizenship and belonging. Emphasis on role of the state, supranational structures and international organizations in migration and mobility.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4808 [0.5 credit]**Global Environmental Politics**

Global politics of transboundary environmental issues such as biodiversity protection, climate change and desertification. The perspectives, actors, institutions and economic relationships affecting international policy responses to these issues.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2401, PSCI 2601, PSCI 2602, or PSCI 3801.

Seminar three hours a week.

PSCI 4809 [0.5 credit]**Honours Seminar on a Selected Topic in Political Science**

A seminar on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4811 [0.5 credit]**International Security and Terrorism**

Conventional approaches to international security; international security in the post-Cold War era; theories and debates on terrorism, its causes and types, and its impact on contemporary global security.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4817 [0.5 credit]**International Politics of Forced Migration**

The relationship between international politics and the causes, consequences and responses to forced migration, internal displacement and refugees. Seminars and case studies are used to examine the evolution of the global refugee regime and the challenges it faces today.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4819 [0.5 credit]**Latin America and the World**

Latin America's changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.

Also listed as LACS 4819.

Prerequisite(s): fourth year standing or permission from the Department.

Seminar three hours a week.

PSCI 4901 [0.5 credit]**Tutorial in a Selected Field**

Tutorials or reading courses on selected topics in which seminars are not available.

Prerequisite(s): permission of the Department and agreement of an instructor.

Tutorial hours arranged.

PSCI 4902 [0.5 credit]**Tutorial in a Selected Field**

Tutorials or reading courses on selected topics in which seminars are not available.

Prerequisite(s): permission of the Department and agreement of an instructor.

Tutorial hours arranged.

PSCI 4905 [0.5 credit]**Washington Center Seminar I**

A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton's Department of Political Science.

Includes: Experiential Learning Activity

Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.

Seminar three hours a week.

PSCI 4906 [0.5 credit]**Washington Center Seminar II**

A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton's Department of Political Science.

Includes: Experiential Learning Activity

Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.

Seminar three hours a week.

PSCI 4908 [1.0 credit]**Honours Research Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Political Science with a Political Science CGPA of 9.00 or better, or permission of the Supervisor of Undergraduate Studies.

PSCI 4909 [1.0 credit]**Mémoire de recherche**

Un travail de recherche dans le domaine de spécialisation d'un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.

Prerequisite(s): fourth-year Honours standing in the Political Science Mention : Français program.

Psychology

This section presents the requirements for programs in:

- Psychology B.A. Honours
- Psychology B.A. Combined Honours
- Concentration in Cognitive Psychology
- Concentration in Developmental Psychology
- Concentration in Forensic Psychology
- Concentration in Health Psychology
- Concentration in Organizational Psychology
- Concentration in Social/Personality Psychology
- Stream in Mental Health and Well-Being
- Psychology B.A.
- Psychology B.Sc. Honours

- Minor in Human Resources and Management for B.A. Honours Psychology
- Minor in Cognitive Psychology
- Minor in Developmental Psychology
- Minor in Forensic Psychology
- Minor in Health Psychology
- Minor in Social Psychology and Personality
- Minor in Organizational Psychology
- Minor in Psychology
- Certificate in Multidisciplinary Studies in Mental Health and Well-Being

Program Requirements

Psychology

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits):

1. 1.0 credit in:		1.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
2. 1.0 credit in:		1.0
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	
3. 0.5 credit from:		0.5
PSYC 2307 [0.5]	Human Neuropsychology I	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	
4. 0.5 credit from:		0.5
PSYC 2301 [0.5]	Introduction to Health Psychology	
PSYC 2801 [0.5]	Organizational Psychology I	
5. 1.0 credit from:		1.0
PSYC 2100 [0.5]	Introduction to Social Psychology	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 2500 [0.5]	Foundations of Developmental Psychology	
PSYC 2600 [0.5]	Introduction to the Study of Personality	
6. 1.0 credit from:		1.0
PSYC 3000 [1.0]	Design and Analysis in Psychological Research	
7. 2.0 credits from:		2.0
a. Thesis pathway:		
i. 1.0 credit from:		
PSYC 3100 [1.0]	Social Psychology (Honours Seminar)	
PSYC 3300 [1.0]	Health (Honours Seminar)	
PSYC 3400 [1.0]	Forensic Psychology (Honours Seminar)	
PSYC 3500 [1.0]	Developmental Psychology (Honours Seminar)	
PSYC 3600 [1.0]	Personality (Honours Seminar)	
PSYC 3700 [1.0]	Cognition (Honours Seminar)	
PSYC 3805 [1.0]	Organizational Psychology (Honours Seminar)	
ii. 1.0 credit in:		
PSYC 4908 [1.0]	Thesis for B.A. with Honours in Psychology	

or	
b. Project pathway	
i. 1.0 credit in PSYC at 3000-level or higher	
ii. 1.0 credit in:	
PSYC 4910 [1.0] Project for B.A. with Honours in Psychology	
8. 1.0 credit in PSYC at 3000-level or higher	1.0
9. 1.0 credit in PSYC	1.0
B. Credits Not Included in the Major CGPA (11.0 credits):	
10. 2.0 credits from BIOL, CHEM, COMP, EARTH, ISCI, HLTH, MATH, NEUR, PHYS, STAT, or TSES	2.0
12. 6.0 credits, not in PSYC	6.0
13. 3.0 credits free electives	3.0
Total Credits	20.0

Note: Registration in the seminars in Requirement 7 a) i) requires a Major CGPA of at least 9.00. Registration in the thesis course PSYC 4908 [1.0] requires a Major CGPA of at least 10.00.

Psychology

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Major CGPA (7.0 credits):

1. 1.0 credit in:	1.0
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	
2. 1.0 credit in:	1.0
PSYC 2001 [0.5] Introduction to Research Methods in Psychology	
PSYC 2002 [0.5] Introduction to Statistics in Psychology	
3. 0.5 credit from:	0.5
PSYC 2307 [0.5] Human Neuropsychology I	
PSYC 2700 [0.5] Introduction to Cognitive Psychology	
4. 0.5 credit from:	0.5
PSYC 2301 [0.5] Introduction to Health Psychology	
PSYC 2801 [0.5] Organizational Psychology I	
5. 1.0 credit from:	1.0
PSYC 2100 [0.5] Introduction to Social Psychology	
PSYC 2400 [0.5] Introduction to Forensic Psychology	
PSYC 2500 [0.5] Foundations of Developmental Psychology	
PSYC 2600 [0.5] Introduction to the Study of Personality	
6. 1.0 credit in:	1.0
PSYC 3000 [1.0] Design and Analysis in Psychological Research	
7. 2.0 credits from:	2.0
a. Thesis pathway	
i. 1.0 credit from:	
PSYC 3100 [1.0] Social Psychology (Honours Seminar)	
PSYC 3300 [1.0] Health (Honours Seminar)	
PSYC 3400 [1.0] Forensic Psychology (Honours Seminar)	
PSYC 3500 [1.0] Developmental Psychology (Honours Seminar)	
PSYC 3600 [1.0] Personality (Honours Seminar)	

PSYC 3700 [1.0] Cognition (Honours Seminar)	
PSYC 3805 [1.0] Organizational Psychology (Honours Seminar)	
ii. 1.0 credit in:	
PSYC 4908 [1.0] Thesis for B.A. with Honours in Psychology	
or	
b. Project pathway	
i. 1.0 credit in PSYC at 3000-level or higher	
ii. 1.0 credit in:	
PSYC 4910 [1.0] Project for B.A. with Honours in Psychology	
B. Additional Requirements (13.0 credits):	13.0
8. The requirements for Combined Honours in the other discipline must be satisfied.	
9. 2.0 credits from BIOL, CHEM, COMP, EARTH, ISCI, HLTH, MATH, NEUR, STAT, PHYS or TSES	
10. Sufficient free electives to make 20.0 credits total for the program	
Total Credits	20.0

Notes:

- All students in B.A. Combined Honours Psychology must complete an Honours Project in either Psychology or the other discipline.
- Students who choose to complete PSYC 4908 or PSYC 4910 to meet Item 7 must also complete Items 2 and 6.
- For Item 7 above, please consult with an advisor in the Department of Psychology for acceptable alternatives to PSYC 4910 and PSYC 4908. If Item 8 is completed in the other discipline, Items 2 and 6 above may be replaced by credits from the other discipline with the permission of the Department of Psychology. In this case, replacement credits in Psychology must be completed so that a minimum of 7.0 credits in Psychology is presented at graduation.

Concentration in Cognitive Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A. Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 0.5 credit in:	0.5
PSYC 2700 [0.5] Introduction to Cognitive Psychology	
2. 3.0 credits from:	3.0
CGSC 3201 [0.5] Cognitive Processes	
PSYC 2307 [0.5] Human Neuropsychology I	
PSYC 3307 [0.5] Human Neuropsychology II	
PSYC 3506 [0.5] Cognitive Development	
PSYC 3508 [0.5] Child Language	
PSYC 3700 [1.0] Cognition (Honours Seminar)	
PSYC 3702 [0.5] Perception	
PSYC 3709 [0.5] Language Processing and the Brain	

PSYC 3710 [0.5]	Introduction to Human Factors
PSYC 3901 [0.5]	Practicum in Psychology
PSYC 3902 [0.5]	Practicum in Psychology
PSYC 3905 [1.0]	Practicum in Psychology
PSYC 4001 [0.5]	Special Topics in Psychology
PSYC 4003 [0.5]	Origins of Modern Psychology
PSYC 4700 [0.5]	Advanced Topics in Cognitive Psychology
PSYC 4900 [0.5]	Independent Study
PSYC 4902 [0.5]	Independent Study
PSYC 4907 [1.0]	Thesis for B.Sc. with Honours in Psychology
PSYC 4908 [1.0]	Thesis for B.A. with Honours in Psychology
PSYC 4909 [1.0]	Project for B.Sc. with Honours in Psychology
PSYC 4910 [1.0]	Project for B.A. with Honours in Psychology
Total Credits	3.5

Notes:

1. If PSYC 3901 , PSYC 3902 or PSYC 3905 are presented in partial fulfillment of **Item 2** above, the placements must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the focus of the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of Item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Developmental Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 0.5 credit in:	0.5
PSYC 2500 [0.5]	Foundations of Developmental Psychology
2. 3.0 credits from:	3.0
PSYC 3500 [1.0]	Developmental Psychology (Honours Seminar)
PSYC 3505 [0.5]	Exceptional Children
PSYC 3506 [0.5]	Cognitive Development
PSYC 3507 [0.5]	Social Development
PSYC 3508 [0.5]	Child Language
PSYC 3509 [0.5]	Adolescence and Emerging Adulthood
PSYC 3901 [0.5]	Practicum in Psychology
PSYC 3902 [0.5]	Practicum in Psychology

PSYC 3905 [1.0]	Practicum in Psychology
PSYC 4001 [0.5]	Special Topics in Psychology
PSYC 4003 [0.5]	Origins of Modern Psychology
PSYC 4500 [0.5]	Advanced Topics in Developmental Psychology
PSYC 4900 [0.5]	Independent Study
PSYC 4902 [0.5]	Independent Study
PSYC 4907 [1.0]	Thesis for B.Sc. with Honours in Psychology
PSYC 4908 [1.0]	Thesis for B.A. with Honours in Psychology
PSYC 4909 [1.0]	Project for B.Sc. with Honours in Psychology
PSYC 4910 [1.0]	Project for B.A. with Honours in Psychology
Total Credits	3.5

Notes:

1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the focus of the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of Item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Forensic Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A. Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 1.0 credit in:	1.0
PSYC 2400 [0.5]	Introduction to Forensic Psychology
PSYC 3402 [0.5]	Criminal Behaviour
2. 2.5 credits from:	2.5
PSYC 3400 [1.0]	Forensic Psychology (Honours Seminar)
PSYC 3403 [0.5]	Addiction
PSYC 3404 [0.5]	Police Psychology
PSYC 3901 [0.5]	Practicum in Psychology
PSYC 3902 [0.5]	Practicum in Psychology
PSYC 3905 [1.0]	Practicum in Psychology
PSYC 4001 [0.5]	Special Topics in Psychology
PSYC 4003 [0.5]	Origins of Modern Psychology
PSYC 4400 [0.5]	Advanced Topics in Forensic Psychology
PSYC 4403 [0.5]	Female Offenders
PSYC 4404 [0.5]	Sex Offenders

PSYC 4900 [0.5]	Independent Study
PSYC 4902 [0.5]	Independent Study
PSYC 4907 [1.0]	Thesis for B.Sc. with Honours in Psychology
PSYC 4908 [1.0]	Thesis for B.A. with Honours in Psychology
PSYC 4909 [1.0]	Project for B.Sc. with Honours in Psychology
PSYC 4910 [1.0]	Project for B.A. with Honours in Psychology
Total Credits	3.5

Notes:

1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented is presented in partial fulfillment of Item 2 above, the focus of the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of Item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Health Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 0.5 credit in:	0.5
PSYC 2301 [0.5]	Introduction to Health Psychology
2. 3.0 credits from:	3.0
PSYC 3300 [1.0]	Health (Honours Seminar)
PSYC 3301 [0.5]	Sport and Performance Psychology
PSYC 3302 [0.5]	Positive Psychology
PSYC 3403 [0.5]	Addiction
PSYC 3604 [0.5]	Clinical Psychology and Mental Illness
PSYC 3901 [0.5]	Practicum in Psychology
PSYC 3902 [0.5]	Practicum in Psychology
PSYC 3905 [1.0]	Practicum in Psychology
PSYC 4001 [0.5]	Special Topics in Psychology
PSYC 4003 [0.5]	Origins of Modern Psychology
PSYC 4301 [0.5]	Advanced Topics in Health Psychology
PSYC 4900 [0.5]	Independent Study
PSYC 4902 [0.5]	Independent Study
PSYC 4907 [1.0]	Thesis for B.Sc. with Honours in Psychology
PSYC 4908 [1.0]	Thesis for B.A. with Honours in Psychology

PSYC 4909 [1.0]	Project for B.Sc. with Honours in Psychology
PSYC 4910 [1.0]	Project for B.A. with Honours in Psychology
Total Credits	3.5

Notes:

1. If PSYC 3901, PSYC 3902, or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the focus of the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of Item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Organizational Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology and the B.A Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 0.5 credit in:	0.5
PSYC 2801 [0.5]	Organizational Psychology I
2. 3.0 credits from:	3.0
PSYC 2100 [0.5]	Introduction to Social Psychology
PSYC 3801 [0.5]	Organizational Psychology II
PSYC 3802 [0.5]	Transition to Career
PSYC 3805 [1.0]	Organizational Psychology (Honours Seminar)
PSYC 3901 [0.5]	Practicum in Psychology
PSYC 3902 [0.5]	Practicum in Psychology
PSYC 3905 [1.0]	Practicum in Psychology
PSYC 4001 [0.5]	Special Topics in Psychology
PSYC 4003 [0.5]	Origins of Modern Psychology
PSYC 4801 [0.5]	Occupational Health Psychology
PSYC 4802 [0.5]	Advanced Topics in Organizational Psychology
PSYC 4900 [0.5]	Independent Study
PSYC 4902 [0.5]	Independent Study
PSYC 4907 [1.0]	Thesis for B.Sc. with Honours in Psychology
PSYC 4908 [1.0]	Thesis for B.A. with Honours in Psychology
PSYC 4909 [1.0]	Project for B.Sc. with Honours in Psychology
PSYC 4910 [1.0]	Project for B.A. with Honours in Psychology
Total Credits	3.5

Notes:

1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the placements must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Concentration in Social/Personality Psychology (3.5 credits)

This concentration is open to all students in the B.A. Honours Psychology, B.Sc. Honours Psychology, and the B.A Combined Honours program. Only one concentration may be taken in a Psychology program. A maximum of 12.0 credits may be counted towards a B.A. or B.Sc. Honours Psychology degree.

1. 1.0 credit in:	1.0
PSYC 2100 [0.5]	Introduction to Social Psychology
PSYC 2600 [0.5]	Introduction to the Study of Personality
2. 2.5 credits from:	2.5
PSYC 3100 [1.0]	Social Psychology (Honours Seminar)
PSYC 3104 [0.5]	Intergroup Relations: The Psychology of Conflict and Violence
PSYC 3106 [0.5]	Close Relationships
PSYC 3302 [0.5]	Positive Psychology
PSYC 3405 [0.5]	Psychology of Motivation and Emotion
PSYC 3600 [1.0]	Personality (Honours Seminar)
PSYC 3603 [0.5]	Psychology of Women
PSYC 3901 [0.5]	Practicum in Psychology
PSYC 3902 [0.5]	Practicum in Psychology
PSYC 3905 [1.0]	Practicum in Psychology
PSYC 4001 [0.5]	Special Topics in Psychology
PSYC 4003 [0.5]	Origins of Modern Psychology
PSYC 4100 [0.5]	Advanced Topics in Social Psychology
PSYC 4600 [0.5]	Advanced Topics in Personality Psychology
PSYC 4900 [0.5]	Independent Study
PSYC 4902 [0.5]	Independent Study
PSYC 4907 [1.0]	Thesis for B.Sc. with Honours in Psychology
PSYC 4908 [1.0]	Thesis for B.A. with Honours in Psychology
PSYC 4909 [1.0]	Project for B.Sc. with Honours in Psychology

PSYC 4910 [1.0]	Project for B.A. with Honours in Psychology	
Total Credits		3.5

Notes:

1. If PSYC 3901, PSYC 3902 or PSYC 3905 are presented in partial fulfillment of Item 2 above, the focus of the placement must be consistent with the theme of the concentration.
2. If PSYC 4001 is presented in partial fulfillment of Item 2 above, the focus of the special topic must be consistent with the theme of the concentration.
3. If PSYC 4900 or PSYC 4902 are presented in partial fulfillment of Item 2 above, the focus of the independent study must be consistent with the theme of the concentration.
4. If PSYC 4907, PSYC 4908, PSYC 4909 or PSYC 4910 are presented in partial fulfillment of Item 2 above, the focus of the thesis or project must be consistent with the theme of the concentration.

Stream in Mental Health and Well-Being (2.5 credits)

The stream in Mental Health and Well-Being has limited enrollment and is restricted to students registered in the B.A. Honours Psychology program or B.Sc. Honours Psychology program with a concentration who have attained fourth-year standing, have a Major CGPA of 10.0 or above, and Departmental approval.

Students enrolled in the stream must satisfy the requirements for the Bachelor of Arts or Bachelor of Science in Psychology while satisfying the credit requirement for the concentration and the stream through appropriate choice of courses.

Students in the Concentration in Health Psychology must complete 1.0 credit from the list of concentration courses in consultation with the Department in addition to PSYC 3302 and PSYC 3604. Students in the Concentration in Social/Personality Psychology must complete 0.5 credit from the list of concentration courses in consultation with the Department in addition to PSYC 3302.

Requirements

1. 2.5 credits in:	2.5
PSYC 3302 [0.5]	Positive Psychology
PSYC 3604 [0.5]	Clinical Psychology and Mental Illness
PSYC 4330 [1.0]	Community Mental Health and Well-Being
PSYC 4333 [0.5]	Clinical Psychology: Assessment and Intervention

Psychology B.A. (15.0 credits)**A. Credits Included in the Major CGPA (6.0 credits):**

1. 1.0 credit in:	1.0
PSYC 1001 [0.5]	Introduction to Psychology I
PSYC 1002 [0.5]	Introduction to Psychology II
2. 1.0 credit in:	1.0

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	
3. 0.5 credit from:		0.5
PSYC 2307 [0.5]	Human Neuropsychology I	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	
4. 0.5 credit from:		0.5
PSYC 2301 [0.5]	Introduction to Health Psychology	
PSYC 2801 [0.5]	Organizational Psychology I	
5. 1.0 credit from:		1.0
PSYC 2100 [0.5]	Introduction to Social Psychology	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 2500 [0.5]	Foundations of Developmental Psychology	
PSYC 2600 [0.5]	Introduction to the Study of Personality	
6. 1.0 credit in PSYC at 3000-level or above		1.0
7. 1.0 credit in PSYC		1.0
B. Credits Not Included in the Major CGPA (9.0 credits):		
8. 6.0 credits not in PSYC		6.0
9. 3.0 credits in free electives		3.0
Total Credits		15.0

Course Categories for B.Sc. Programs

The program description for B.Sc. Psychology makes use of the course categories defined for all B.Sc. programs (see Academic Regulations for the Bachelor of Science Degree):

- Science Faculty Electives
- Science Continuation Courses
- Free Elective

Psychology

B.Sc. Honours (20.0 credits)

A. Credits Included in the Major CGPA (9.0 credits):

1. 1.0 credit in:		1.0
PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
2. 1.0 credit in:		1.0
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	
3. 0.5 credit from:		0.5
PSYC 2307 [0.5]	Human Neuropsychology I	
PSYC 2700 [0.5]	Introduction to Cognitive Psychology	
4. 0.5 credit from:		0.5
PSYC 2301 [0.5]	Introduction to Health Psychology	
PSYC 2801 [0.5]	Organizational Psychology I	
5. 1.0 credit from:		1.0
PSYC 2100 [0.5]	Introduction to Social Psychology	
PSYC 2400 [0.5]	Introduction to Forensic Psychology	
PSYC 2500 [0.5]	Foundations of Developmental Psychology	

PSYC 2600 [0.5]	Introduction to the Study of Personality	
6. 1.0 credit in:		1.0
PSYC 3000 [1.0]	Design and Analysis in Psychological Research	
7. 2.0 credits from:		2.0
a. Thesis Stream		
i. 1.0 credit from:		
PSYC 3100 [1.0]	Social Psychology (Honours Seminar)	
PSYC 3300 [1.0]	Health (Honours Seminar)	
PSYC 3400 [1.0]	Forensic Psychology (Honours Seminar)	
PSYC 3500 [1.0]	Developmental Psychology (Honours Seminar)	
PSYC 3600 [1.0]	Personality (Honours Seminar)	
PSYC 3700 [1.0]	Cognition (Honours Seminar)	
PSYC 3805 [1.0]	Organizational Psychology (Honours Seminar)	
ii. 1.0 credit in:		
PSYC 4907 [1.0]	Thesis for B.Sc. with Honours in Psychology	
or		
b. Project Stream		
i. 1.0 credit in PSYC at 3000-level or higher		
ii. 1.0 credit in:		
PSYC 4909 [1.0]	Project for B.Sc. with Honours in Psychology	
8. 1.0 credit in PSYC at 3000-level or higher		1.0
9. 1.0 credit in PSYC		1.0
B. Credits Not Included in the Major CGPA (11.0 credits):		
10. 1.0 credit in:		1.0
MATH 1007 [0.5]	Elementary Calculus I	
MATH 1107 [0.5]	Linear Algebra I	
11. 2.0 credits from:		2.0
BIOL 1103 [0.5]	Foundations of Biology I	
& BIOL 1104 [0.5]	Foundations of Biology II	
CHEM 1001 [0.5]	General Chemistry I	
& CHEM 1002 [0.5]	General Chemistry II	
CHEM 1005 [0.5]	Elementary Chemistry I	
& CHEM 1006 [0.5]	Elementary Chemistry II	
GEOG 1010 [0.5]	Global Environmental Systems	
ERTH 1006 [0.5]	Exploring Planet Earth	
ERTH 1009 [0.5]	The Earth System Through Time	
PHYS 1007 [0.5]	Elementary University Physics I	
& PHYS 1008 [0.5]	Elementary University Physics II	
PHYS 1003 [0.5]	Introductory Mechanics and	
& PHYS 1004 [0.5]	Thermodynamics Introductory Electromagnetism and Wave Motion	
12. 1.0 credit from Science Faculty Electives or from a discipline other than Psychology outside the faculties of Science and Engineering and Design (NSCI 1000 recommended)		1.0
13. 2.0 credits from a discipline other than Psychology outside the faculties of Science and Engineering and Design		2.0
14. 1.0 credit in Science Continuation (not PSYC)		1.0

15. 1.0 credit in BIOL, CHEM, EARTH, MATH, STAT or PHYS at the 2000-level or above	1.0
16. 3.0 credits in free electives	3.0
Total Credits	20.0

Note: registration in the seminars in **Item 7 a) i)** requires a Major CGPA of at least 9.0. Registration in the thesis course PSYC 4907 [1.0] requires a Major CGPA of at least 10.0.

Minor in Human Resources and Management for B.A. Honours Psychology (5.0 credits)

Only students pursuing Bachelor of Arts Honours with a Major in Psychology who have completed at least 4.0 credits toward their degrees with a minimum overall CGPA of 7.00 may be admitted to Minor in Human Resources and Management. Students must successfully complete PSYC 2801 prior to entry in to the Minor, with a minimum grade of B+. PSYC 3801 must be successfully completed prior to taking any of the 4000-level BUSI courses listed in the Minor. Enrolment is limited.

Students who are required to leave the Minor due to a low Minor CGPA may not return to the Minor at any subsequent date.

Students are required to present a Minor CGPA of 6.50 or higher at graduation in order to be awarded a Minor in Human Resources and Management for B.A. Honours Psychology.

Requirements

1. 1.0 credits in:	1.0
PSYC 2801 [0.5] Organizational Psychology I	
PSYC 3801 [0.5] Organizational Psychology II	
2. 1.0 credits in:	1.0
BUSI 3102 [0.5] Introduction to Human Resources Management	
BUSI 3103 [0.5] Introduction to Organization Theory	
3. 2.0 credits from:	2.0
BUSI 3104 [0.5] Managing Individual Performance	
BUSI 3105 [0.5] Managing and Motivating Teams	
BUSI 3106 [0.5] Managing Conflict and Negotiation	
BUSI 4104 [0.5] Strategic Human Resources Management	
BUSI 4105 [0.5] Managing Change	
BUSI 4112 [0.5] Organizational Leadership	
4. 0.5 credit in:	0.5
BUSI 2204 [0.5] Basic Marketing	
5. 0.5 credit from:	0.5
BUSI 2800 [0.5] Entrepreneurship	
BUSI 3209 [0.5] Consumer Behaviour	
Total Credits	5.0

Minor in Cognitive Psychology (4.0 credits)

Open to all undergraduate students in programs other than Psychology and Cognitive Science.

Requirements:

1. 2.0 credits in:	2.0
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	

PSYC 2001 [0.5] Introduction to Research Methods in Psychology	
PSYC 2002 [0.5] Introduction to Statistics in Psychology	
2. 1.5 credits in:	1.5
PSYC 2307 [0.5] Human Neuropsychology I	
PSYC 2700 [0.5] Introduction to Cognitive Psychology	
PSYC 3702 [0.5] Perception	
3. 0.5 credit from:	0.5
PSYC 3307 [0.5] Human Neuropsychology II	
PSYC 3506 [0.5] Cognitive Development	
PSYC 3508 [0.5] Child Language	
PSYC 3709 [0.5] Language Processing and the Brain	
PSYC 3710 [0.5] Introduction to Human Factors	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Minor in Developmental Psychology (4.0 credits)

Open to all undergraduate students in programs other than Psychology.

Requirements:

1. 2.0 credits in:	2.0
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	
PSYC 2001 [0.5] Introduction to Research Methods in Psychology	
PSYC 2002 [0.5] Introduction to Statistics in Psychology	
2. 0.5 credit in:	0.5
PSYC 2500 [0.5] Foundations of Developmental Psychology	
3. 1.5 credits from:	1.5
PSYC 3505 [0.5] Exceptional Children	
PSYC 3506 [0.5] Cognitive Development	
PSYC 3507 [0.5] Social Development	
PSYC 3508 [0.5] Child Language	
PSYC 3509 [0.5] Adolescence and Emerging Adulthood	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	
Total Credits	4.0

Minor in Forensic Psychology (4.0 credits)

Open to all undergraduate students in programs other than Psychology and Criminology and Criminal Justice with Concentration in Psychology.

Requirements:

1. 2.0 credits in:	2.0
PSYC 1001 [0.5] Introduction to Psychology I	
PSYC 1002 [0.5] Introduction to Psychology II	
PSYC 2001 [0.5] Introduction to Research Methods in Psychology	
PSYC 2002 [0.5] Introduction to Statistics in Psychology	
2. 1.0 credits in:	1.0
PSYC 2400 [0.5] Introduction to Forensic Psychology	

PSYC 3402 [0.5]	Criminal Behaviour	
3. 1.0 credits from:		1.0
PSYC 3403 [0.5]	Addiction	
PSYC 3404 [0.5]	Police Psychology	
PSYC 3604 [0.5]	Clinical Psychology and Mental Illness	

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Minor in Health Psychology (4.0 credits)

Open to all undergraduate students in programs other than Psychology.

Requirements:

1. 2.0 credits in: **2.0**

PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	

2. 1.5 credits in: **1.5**

PSYC 2301 [0.5]	Introduction to Health Psychology	
PSYC 3302 [0.5]	Positive Psychology	
PSYC 3604 [0.5]	Clinical Psychology and Mental Illness	

3. 0.5 credit from: **0.5**

PSYC 3301 [0.5]	Sport and Performance Psychology	
PSYC 3403 [0.5]	Addiction	
PSYC 3405 [0.5]	Psychology of Motivation and Emotion	

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Minor in Social Psychology and Personality (4.0 credits)

Open to all undergraduate students in programs other than Psychology.

Requirements:

1. 2.0 credits in: **2.0**

PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	

2. 1.0 credits in: **1.0**

PSYC 2100 [0.5]	Introduction to Social Psychology	
PSYC 2600 [0.5]	Introduction to the Study of Personality	

3. 1.0 credits from: **1.0**

PSYC 3104 [0.5]	Intergroup Relations: The Psychology of Conflict and Violence	
PSYC 3106 [0.5]	Close Relationships	
PSYC 3302 [0.5]	Positive Psychology	
PSYC 3405 [0.5]	Psychology of Motivation and Emotion	

PSYC 3603 [0.5]	Psychology of Women	
4. The remaining requirements of the major discipline(s) and degree must be satisfied.		

Total Credits **4.0**

Minor in Organizational Psychology (4.0 credits)

Open to all undergraduate students in programs other than Psychology.

Requirements:

1. 2.0 credits in: **2.0**

PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	
PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	

2. 1.0 credits in: **1.0**

PSYC 2801 [0.5]	Organizational Psychology I	
PSYC 3801 [0.5]	Organizational Psychology II	

3. 1.0 credits from: **1.0**

PSYC 2100 [0.5]	Introduction to Social Psychology	
PSYC 2600 [0.5]	Introduction to the Study of Personality	
PSYC 3001 [0.5]	Psychological Testing	

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Minor in Psychology

Open to all undergraduate students in programs other than Psychology and Criminology and Criminal Justice with a concentration in Psychology.

Requirements

1. 1.0 credit in: **1.0**

PSYC 1001 [0.5]	Introduction to Psychology I	
PSYC 1002 [0.5]	Introduction to Psychology II	

2. 1.0 credit in: **1.0**

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology	
PSYC 2002 [0.5]	Introduction to Statistics in Psychology	

3. 2.0 credits in PSYC at the 2000-level or above **2.0**

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Certificate in Multidisciplinary Studies in Mental Health and Well-Being (5.0 credits)

May be taken following successful completion of any undergraduate degree or concurrently with any degree except for Psychology with the Stream in Mental Health and Well-Being. Students who hold a degree in Psychology may be required to take additional credits to fulfill the certificate residency requirement; see Section 2.2.2 Minimum Number of Residency Credits.

Requirements

1. 1.0 credit in: **1.0**

PSYC 1001 [0.5]	Introduction to Psychology I	
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PSYC 1002 [0.5]	Introduction to Psychology II	
2. 2.0 credits in:		2.0
PSYC 2301 [0.5]	Introduction to Health Psychology	
PSYC 3302 [0.5]	Positive Psychology	
PSYC 3403 [0.5]	Addiction	
PSYC 3604 [0.5]	Clinical Psychology and Mental Illness	
3. 2.0 credits from two or more units:		2.0
Anthropology		
ANTH 2020 [0.5]	Race and Ethnicity	
ANTH 2040 [0.5]	Anthropology and Gender	
ANTH 2070 [0.5]	Psychological Anthropology	
ANTH 2550 [0.5]	Religion and Society	
ANTH 3020 [0.5]	Studies in Race and Ethnicity	
ANTH 3040 [0.5]	The Global Middle Class	
ANTH 3310 [0.5]	Studies in Medical Anthropology	
ANTH 4005 [0.5]	Health and Globalization	
ANTH 4780 [0.5]	Anthropology of Personhood	
Business		
BUSI 3104 [0.5]	Managing Individual Performance	
BUSI 4105 [0.5]	Managing Change	
Disability Studies		
DBST 1001 [0.5]	Introduction to Disability Studies	
Economics		
ECON 3460 [0.5]	Introduction to Health Economics	
Geography		
GEOG 3206 [0.5]	Health, Environment, and Society	
Health Sciences		
HLTH 1001 [0.5]	Principles of Health I	
HLTH 2003 [0.5]	Social Determinants of Health	
HLTH 3403 [0.5]	Gender and Health	
History		
HIST 3106 [0.5]	Social History of Sexuality	
HIST 3120 [0.5]	History of the Body	
Human Rights		
HUMR 1001 [1.0]	Introduction to Human Rights	
Industrial Design		
IDES 2600 [0.5]	Human Factors/Ergonomics in Design	
Law		
LAWS 2105 [0.5]	Social Justice and Human Rights	
Linguistics		
LING 2604 [0.5]	Communication Differences and Disabilities I	
LING 3604 [0.5]	Communication Differences and Disabilities II	
Music		
MUSI 3303 [0.5]	Introduction to Music Therapy	
Neuroscience		
NEUR 1202 [0.5]	Neuroscience of Mental Health and Psychiatric Disease	
NEUR 1203 [0.5]	Neuroscience of Mental Health and Neurological Disease	
Philosophy		
PHIL 1200 [0.5]	The Meaning of Life	
PHIL 1700 [0.5]	Philosophy of Love and Sex	
PHIL 2307 [0.5]	Gender and Philosophy	

PHIL 2380 [0.5]	Introduction to Environmental Ethics
PHIL 2408 [0.5]	Bioethics
PHIL 2540 [0.5]	Personal Identity and the Self
PHIL 2550 [0.5]	Moral Psychology
PHIL 2700 [0.5]	Asian Philosophy
Religion	
RELI 1731 [0.5]	Varieties of Religious Experience
RELI 2732 [0.5]	Death and Afterlife
Sociology	
SOCI 2020 [0.5]	Race and Ethnicity
SOCI 2030 [0.5]	Work, Industry and Occupations
SOCI 2040 [0.5]	Food, Culture and Society
SOCI 2043 [0.5]	Sociology of the Family
SOCI 2045 [0.5]	Gender and Society
SOCI 2050 [0.5]	Sociology of Health
SOCI 3010 [0.5]	Power, Oppression and Resistance
SOCI 3020 [0.5]	Studies in Race and Ethnicity
SOCI 3040 [0.5]	Studies in the Sociology of Gender
SOCI 3044 [0.5]	Sociology of Sex and Sexuality
SOCI 3050 [0.5]	Studies in the Sociology of Health
SOCI 3055 [0.5]	Studies in Addictions
SOCI 3056 [0.5]	Women and Health
SOCI 4043 [0.5]	Families in the 21st Century
Social Work	
SOWK 1001 [0.5]	Introduction to Social Welfare
SOWK 1002 [0.5]	Introduction to Social Work
Technology, Society, Environmental Studies	
TSES 3001 [0.5]	Technology-Society Interactions
TSES 4001 [0.5]	Technology and Society: Risk
4. 12 hours of non-credit training from an approved list of activities. Refer to the Department of Psychology for more information.	

Total Credits **5.0**

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits,

which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE,

MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in Science Continuation courses in each of the two majors;**
2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,

2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry	
BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering
Biology	
BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology
Chemistry	
CHEM 1001 [0.5]	General Chemistry I

CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Course Categories for B.Sc. Programs

Science Geography Courses

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 2006 [0.5]	Introduction to Quantitative Research
GEOG 2013 [0.5]	Weather and Water
GEOG 2014 [0.5]	The Earth's Surface

GEOG 3003 [0.5]	Quantitative Geography
GEOG 3010 [0.5]	Field Methods in Physical Geography
GEOG 3102 [0.5]	Geomorphology
GEOG 3103 [0.5]	Watershed Hydrology
GEOG 3104 [0.5]	Principles of Biogeography
GEOG 3105 [0.5]	Climate and Atmospheric Change
GEOG 3106 [0.5]	Aquatic Science and Management
GEOG 3108 [0.5]	Soil Properties
GEOG 4000 [0.5]	Field Studies
GEOG 4005 [0.5]	Directed Studies in Geography
GEOG 4013 [0.5]	Cold Region Hydrology
GEOG 4017 [0.5]	Global Biogeochemical Cycles
GEOG 4101 [0.5]	Two Million Years of Environmental Change
GEOG 4103 [0.5]	Water Resources Engineering
GEOG 4104 [0.5]	Microclimatology
GEOG 4108 [0.5]	Permafrost

Science Psychology Courses

PSYC 2001 [0.5]	Introduction to Research Methods in Psychology
PSYC 2002 [0.5]	Introduction to Statistics in Psychology
PSYC 2700 [0.5]	Introduction to Cognitive Psychology
PSYC 3000 [1.0]	Design and Analysis in Psychological Research
PSYC 3506 [0.5]	Cognitive Development
PSYC 3700 [1.0]	Cognition (Honours Seminar)
PSYC 3702 [0.5]	Perception
PSYC 2307 [0.5]	Human Neuropsychology I
PSYC 3307 [0.5]	Human Neuropsychology II

Science Continuation Courses

A course at the 2000 level or above may be used as a Science Continuation credit in a B.Sc. program if it is not in the student's major discipline, and is chosen from the following:

BIOC (Biochemistry)

BIOL (Biology) Biochemistry students may use BIOL 2005 only as a free elective.

CHEM (Chemistry)

COMP (Computer Science) A maximum of two half-credits at the 1000-level in COMP, excluding COMP 1001 may be used as Science Continuation credits.

ERTH (Earth Sciences), except ERTH 2415 which may be used only as a free elective for any B.Sc. program. Students in Earth Sciences programs may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering. Students wishing to register in Engineering courses must obtain the permission of the Faculty of Engineering and Design.

ENSC (Environmental Science)

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Sciences)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics), except PHYS 2903

Science Geography Courses (see list above)

Science Psychology Courses (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) except TSES 2305. Biology students may use these courses only as free electives. Integrated Science and Environmental Science students may include these courses in their programs but may not count them as part of the Science Sequence.

Science Faculty Electives

Science Faculty Electives are courses at the 1000-4000 level chosen from:

BIOC (Biochemistry)

BIOL (Biology) Biology & Biochemistry students may use BIOL 1010 and BIOL 2005 only as free electives

CHEM (Chemistry) except CHEM 1003, CHEM 1004 and CHEM 1007

COMP (Computer Science) except COMP 1001

ERTH (Earth Sciences) except ERTH 1010, ERTH 1011 and ERTH 2415. Earth Sciences students may use ERTH 2401, ERTH 2402, and ERTH 2403 only as free electives.

Engineering

ENSC 2001

FOOD (Food Science and Nutrition)

GEOM (Geomatics)

HLTH (Health Science)

ISAP (Interdisciplinary Science Practice)

MATH (Mathematics)

NEUR (Neuroscience)

PHYS (Physics) except PHYS 1901, PHYS 1902, PHYS 1905, PHYS 2903

Science Geography (see list above)

Science Psychology (see list above)

STAT (Statistics)

TSES (Technology, Society, Environment) Biology students may use these courses only as free electives.

Advanced Science Faculty Electives

Advanced Science Faculty Electives are courses at the 2000-4000 level chosen from the Science Faculty Electives list above.

Approved Courses Outside the Faculties of Science and Engineering and Design (may include NSCI 1000)

All courses offered by the Faculty of Arts and Social Sciences, the Faculty of Public Affairs, and the Sprott School of Business are approved as Arts or Social Sciences courses EXCEPT FOR: All Science Geography courses (see list above), all Geomatics (GEOM) courses, all Science Psychology courses (see list above). NSCI 1000 may be used as an Approved Course Outside the Faculties of Science and Engineering and Design.

Free Electives

Any course is allowable as a Free Elective providing it is not prohibited (see below). Students are expected to comply with prerequisite requirements and enrolment restrictions for all courses as published in this Calendar.

Courses Allowable Only as Free Electives in any B.Sc. Program

BIOL 4810 [0.5] Education Research in Biology

CHEM 1003 [0.5] The Chemistry of Food, Health and Drugs

CHEM 1004 [0.5] Drugs and the Human Body

CHEM 1007 [0.5] Chemistry of Art and Artifacts

ERTH 1010 [0.5] Our Dynamic Planet Earth

ERTH 1011 [0.5] Evolution of the Earth

ERTH 2415 [0.5] Natural Disasters

ISCI 1001 [0.5] Introduction to the Environment

ISCI 2000 [0.5] Natural Laws

ISCI 2002 [0.5] Human Impacts on the Environment

MATH 0107 [0.5] Algebra and Geometry

PHYS 1901 [0.5] Planetary Astronomy

PHYS 1902 [0.5] From our Star to the Cosmos

PHYS 1905 [0.5] Physics Behind Everyday Life

PHYS 2903 [0.5] Physics Towards the Future

Prohibited Courses

The following courses are not acceptable for credit in any B.Sc. program:

COMP 1001 [0.5] Introduction to Computational Thinking for Arts and Social Science Students

MATH 0005 [0.5] Precalculus: Functions and Graphs

MATH 0006 [0.5] Precalculus: Trigonometric Functions and Complex Numbers

MATH 1009 [0.5] Mathematics for Business

MATH 1119 [0.5] Linear Algebra: with Applications to Business

MATH 1401 [0.5] Elementary Mathematics for Economics I

MATH 1402 [0.5] Elementary Mathematics for Economics II

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin

their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Psychology: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Have an overall minimum CGPA of 9.50 and a major CGPA of 9.5 at the end of first year of academic study
2. Have second-year standing
3. Have successfully completed, by the start-date of the first work term, PSYC 2001 and PSYC 2002

Students in B.A. Honours Psychology must successfully complete three (3) work terms to obtain the Co-op designation.

Work Term Report Course: PSYC 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer	O	Summer	W	Summer	W/S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System.

Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required.

Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;

2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degrees

- B.Sc. (Honours)
- B.Sc. (Major)
- B.Sc.

Admission Requirements

B. Sc. Honours

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. For most programs including Biochemistry, Bioinformatics, Biotechnology, Chemistry, Combined Honours in Biology and Physics, Chemistry and Physics, Computational Biochemistry, Food Science, Nanoscience, Neuroscience and Biology, Neuroscience and Mental Health, and Psychology, the six 4U or M courses must include Advanced Functions, and two of Biology, Chemistry, Earth and Space Sciences, or Physics. (Calculus and Vectors is strongly recommended).

Specific Honours Admission Requirements

For the Honours programs in Earth Sciences, Environmental Science, Geomatics, Interdisciplinary Science and Practice, and Physical Geography, Calculus and Vectors may be substituted for Advanced Functions.

For the Honours programs in Physics and Applied Physics, and for double Honours in Mathematics and Physics, Calculus and Vectors is required in addition to Advanced Functions and one of 4U Physics, Chemistry, Biology, or Earth and Space Sciences. For all programs in Physics, 4U Physics is strongly recommended.

For Honours in Psychology, a 4U course in English is recommended.

For Honours in Environmental Science, a 4U course in Biology and Chemistry is recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects deemed appropriate for the program and stream selected.

B.Sc. Major and B.Sc.

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include Advanced Functions and two of Calculus and Vectors, Biology, Chemistry, Earth and Space Science, or Physics (Calculus and Vectors is strongly recommended). For the B.Sc. Major in Physics, 4U Physics is strongly recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level. Advanced

standing will be granted only for those subjects deemed appropriate for the program and stream selected.

Co-op Option

Direct Admission to the First Year of the Co-op Option
Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Science Honours program;
3. be eligible to work in Canada (for off-campus work placements).

Note that meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Admission Requirements

To be eligible for admission to the Certificate in Multidisciplinary Studies in Mental Health and Well-Being, applicants must:

- have successfully completed any undergraduate degree, or;
- meet the admission requirements for the Bachelor of Arts, or;
- be currently enrolled and *Eligible to Continue*, and meeting the CGPA thresholds defined in Section 3.1.9 of the *Academic Regulations of the University*, in any degree offered at Carleton.

Note: Students who are currently enrolled in, or have graduated from, a degree in Psychology with the Stream in Mental Health and Well-Being are not eligible for this program. Students who hold a degree in Psychology may be required to take additional credits to fulfill the certificate residency requirement; see Section 2.2.2 of the *Academic Regulations of the University*, Minimum Number of Residency Credits.

Psychology (PSYC) Courses

PSYC 1001 [0.5 credit]

Introduction to Psychology I

A survey of topics associated with psychology's role as a natural science, including neuroscience, cognition, and learning.

Precludes additional credit for PSYC 1000.

Lecture three hours a week.

PSYC 1002 [0.5 credit]**Introduction to Psychology II**

A survey of topics associated with psychology's role as a social science, including social psychology, personality, clinical psychology, and mental health.

Precludes additional credit for PSYC 1000.

Prerequisite(s): PSYC 1001.

Lecture three hours a week.

PSYC 2001 [0.5 credit]**Introduction to Research Methods in Psychology**

A general introduction to research methodologies employed within contemporary psychology. Topics covered include research designs (experimental, quasi-experimental) and techniques (observations, surveys), basic descriptive statistics, and how to interpret and report research findings.

Precludes additional credit for NEUR 2001 and PSYC 2000 (no longer offered).

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lecture three hours a week. May include laboratories.

PSYC 2002 [0.5 credit]**Introduction to Statistics in Psychology**

A general introduction to statistical techniques employed within contemporary psychology. Topics include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square).

Precludes additional credit for NEUR 2002.

Prerequisite(s): PSYC 2001.

Lecture three hours a week. May include laboratories.

PSYC 2100 [0.5 credit]**Introduction to Social Psychology**

Introduction to social psychology, including a survey of theories, issues, methods, and findings. This course will explore how social situations may influence people's thoughts, feelings, and behaviours. Topics may include social cognition, self-knowledge, persuasion, interpersonal attraction, aggression, and prosocial behaviour.

Precludes additional credit for SOCI 2150.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2301 [0.5 credit]**Introduction to Health Psychology**

Introduction to health psychology, including a survey of theories, issues, methods, and findings. Using a multidisciplinary approach, topics may include the reciprocal interactions among physical health and illness, and psychological factors, including emotional well-being, coping and appraisal processes.

Precludes additional credit for PSYC 3406.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2307 [0.5 credit]**Human Neuropsychology I**

Introduction to study of brain-behaviour relationships, including a survey of theories, issues, methods, and findings. Topics may include basic anatomy and physiology of the human nervous system, including sensory and motor functions. Neural basis of language, perception, emotion, learning, memory, decision making and social cognition.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2400 [0.5 credit]**Introduction to Forensic Psychology**

Introduction to forensic psychology, including a survey of theories, issues, methods, and findings. Topics covered may include development of offending, eyewitness testimony, victim studies, risk assessment, offender rehabilitation, offender classification, and police studies.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2500 [0.5 credit]**Foundations of Developmental Psychology**

Introduction to developmental psychology, including a survey of theories, issues, methods, and findings. Topics may include biological underpinnings and genetics, as well as selected aspects of language, cognitive, moral, emotional, and social development.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2600 [0.5 credit]**Introduction to the Study of Personality**

Introduction to the study of personality, including a survey of theories, issues, methods, and findings. Explores the factors that contribute to people's personality and influence how they interact with others. Topics may include traits, motives, the self, physiology, the unconscious, relationships, stress and coping.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2700 [0.5 credit]**Introduction to Cognitive Psychology**

Introduction to cognitive processes, including a survey of theories, issues, methods and findings. Topics covered may include pattern recognition, attention, imagery, learning (animal and human), memory, language, and thinking.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2801 [0.5 credit]**Organizational Psychology I**

Introduction to the study of organizational psychology, including a survey of theories, issues, methods, and findings. Examines individual and group behaviour in organizational settings. Topics may include understanding work-related attitudes, behaviour, motivation, and stress, personnel selection, personality in the workplace, organizational justice, and leadership.

Precludes additional credit for PSYC 3105, PSYC 3803 (no longer offered).

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours per week.

PSYC 3000 [1.0 credit]**Design and Analysis in Psychological Research**

Techniques in data analysis, probability, sampling distributions, and procedures of estimation. Topics include classical, Bayesian, and distribution free approaches to hypothesis testing, linear regression and curve fitting, and analysis of variance methods in experimental design. Techniques are applied with appropriate statistical software (e.g., SPSS, Excel).

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, PSYC 2001, and PSYC 2002.

Lectures and tutorial four hours a week.

PSYC 3001 [0.5 credit]**Psychological Testing**

An introduction to theory and issues pertaining to psychological tests. Topics include the creation, assessment, scoring, and interpretation of results across different testing formats (questionnaires, surveys, structured interviews, performance-based measurements). Classical and modern techniques will be incorporated. Students will apply psychological testing theory through assignments.

Prerequisite(s): PSYC 2001 and PSYC 2002.

Lectures three hours a week.

PSYC 3100 [1.0 credit]**Social Psychology (Honours Seminar)**

An introduction to theory and research in social psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2100, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3104 [0.5 credit]**Intergroup Relations: The Psychology of Conflict and Violence**

In-depth coverage of the social psychology of relations within and between large societal groups. Topics may include social identity, stereotyping, prejudice, and intergroup emotions, with emphasis on their role in promoting conflict and paths to pro-social intergroup relations.

Also listed as SOWK 3103.

Precludes additional credit for PSYC 3103 (no longer offered).

Prerequisite(s): PSYC 2100.

Lectures three hours per week.

PSYC 3106 [0.5 credit]**Close Relationships**

A consideration of relationship science, with a focus on social psychological theory and empirical approaches to the study of close relationships such as dating and marital relationships, and friendships. Topics may include relationship initiation, relationship maintenance, and coping with the dissolution of relationships.

Prerequisite(s): PSYC 2100.

Lectures three hours per week.

PSYC 3300 [1.0 credit]**Health (Honours Seminar)**

An applied introduction to theory and research in health psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2301, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3301 [0.5 credit]**Sport and Performance Psychology**

How psychological processes influence outcomes across sport and performance environments. Topics may include self-confidence, goal-setting, arousal regulation, imagery, group dynamics, burnout, injury recovery, and how person and situational factors affect the pursuit of excellence.

Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.

Lectures three hours a week.

PSYC 3302 [0.5 credit]**Positive Psychology**

A review of theoretical, historical, and empirical scholarship in positive psychology. Drawing widely across traditional sub-disciplines, content focuses on human strengths, well-being, resilience, and virtue to understand internal, external, and developmental contributors to health and happiness.

Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.

Lectures three hours a week.

PSYC 3307 [0.5 credit]**Human Neuropsychology II**

Cortical metabolism and research methods for assessment of cortical function, neuropsychological testing in the context of neurological, psychiatric and cognitive disorders caused by nervous system damage or genetic anomaly.

Precludes additional credit for PSYC 3207 (no longer offered).

Prerequisite(s): PSYC 2307.

Lectures three hours a week.

PSYC 3400 [1.0 credit]**Forensic Psychology (Honours Seminar)**

An applied introduction to theory and research in forensic psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2400, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3402 [0.5 credit]**Criminal Behaviour**

A review of theoretical and empirical research in the study of criminal behaviour. Examination of offender assessment and classification, prevalence and types of offenders, and effectiveness of offender treatment including understanding specific populations of offenders such as Indigenous offenders, women offenders and violent offenders.

Prerequisite(s): PSYC 2400.

Lectures three hours a week.

PSYC 3403 [0.5 credit]**Addiction**

Neurobiological and social bases of drug and behavioural addictions. Contemporary theoretical approaches to addiction; approaches to current prevention and treatment.

Prerequisite(s): one of PSYC 2301, PSYC 2307, PSYC 2400.

Lectures three hours a week.

PSYC 3404 [0.5 credit]**Police Psychology**

Critical examination of theory and empirical research in the area of police psychology. Topics covered may include police culture, police selection, police suicide, police personality, stress debriefing, fitness evaluations, police training, crisis negotiations, and investigative techniques. Precludes additional credit for PSYC 4402 (no longer offered).

Prerequisite(s): PSYC 2400.

Lectures three hours per week.

PSYC 3405 [0.5 credit]**Psychology of Motivation and Emotion**

This course will explore motivational and emotional factors involved in human behaviour emphasizing various perspectives, theories, and research pertaining to physiological, cognitive, and social needs. Topics may include what factors motivates people, how motivation changes over time, and how one person can motivate another individual.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 3500 [1.0 credit]**Developmental Psychology (Honours Seminar)**

An introduction to theory and research in developmental psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2500, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3505 [0.5 credit]**Exceptional Children**

An overview of childhood exceptionalities including intellectual differences, communication disorders, sensory and physical impairments, developmental and behavioural problems.

Prerequisite(s): PSYC 2500.

Lectures three hours a week.

PSYC 3506 [0.5 credit]**Cognitive Development**

Human cognitive development is examined with a focus on memory, thinking and language through the life span. Topics may include perceptual and language development, emergent literacy, development of strategies and development of reading and arithmetic skills.

Prerequisite(s): PSYC 2500 or PSYC 2700.

Lectures three hours a week.

PSYC 3507 [0.5 credit]**Social Development**

Development of the individual with a focus on social cognition and social behaviour. Topics may include the role of temperament in development, parental roles, siblings and peers in social/emotional development, development of prosocial and aggressive behaviour, moral development and development of self and other understanding.

Prerequisite(s): PSYC 2500.

Lectures three hours a week.

PSYC 3508 [0.5 credit]**Child Language**

Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.

Includes: Experiential Learning Activity

Also listed as LING 3603.

Precludes additional credit for LALS 2603 (no longer offered).

Prerequisite(s): LING 1001 and second-year standing, or permission of the instructor.

Lectures three hours per week.

PSYC 3509 [0.5 credit]**Adolescence and Emerging Adulthood**

The physical, cognitive, social and moral development of adolescents and emerging adults in multiple contexts including family, peers, media and culture. Major theories and contemporary issues and concerns.

Prerequisite(s): PSYC 2500.

Lectures three hours a week.

PSYC 3600 [1.0 credit]**Personality (Honours Seminar)**

An introduction to theory and research in personality psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2600, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3603 [0.5 credit]**Psychology of Women**

An examination of theories and research regarding the similarities and differences in women's and men's psychological processes. Psychological issues relevant to women (e.g., women's health concerns, women's sexuality, violence toward women and children) will be examined as well as feminist and traditional research methods.

Prerequisite(s): one of PSYC 2100, PSYC 2500, PSYC 2600.

Lectures three hours a week.

PSYC 3604 [0.5 credit]**Clinical Psychology and Mental Illness**

History of the concept of mental illness. Theory and selected research dealing with the nature and etiology of mental illness.

Prerequisite(s): PSYC 2301, PSYC 2500 or PSYC 2600.

Lectures three hours a week.

PSYC 3700 [1.0 credit]**Cognition (Honours Seminar)**

An introduction to theory and research in cognitive psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2700, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3702 [0.5 credit]**Perception**

Introduction to theory, research methods and principles associated with the study of perceptual processes. Examples of how perceptual principles can be applied to solve problems in communications, transportation, medicine, industrial design, manufacturing, marketing, food and beverage industries (flavoring, blending, and scenting, etc.).

Precludes additional credit for NEUR 3202.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 3709 [0.5 credit]**Language Processing and the Brain**

Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.

Includes: Experiential Learning Activity

Also listed as LING 3601.

Precludes additional credit for LALS 2601 and LALS 3601 (no longer offered).

Prerequisite(s): LALS 1000 or LALS 1001 or LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.

Lectures three hours a week.

PSYC 3710 [0.5 credit]**Introduction to Human Factors**

Theoretical foundation, philosophy and practical application of techniques for analyzing from a psychological perspective how people interact with designed environments. A major goal is to determine how these environments should be designed to suit human capabilities.

Precludes additional credit for PSYC 2800 (no longer offered).

Prerequisite(s): PSYC 2001 and PSYC 2002.

Lecture three hours a week.

PSYC 3801 [0.5 credit]**Organizational Psychology II**

Advanced coverage of the current theory and practices in Organizational Psychology. Selected topics may include workplace socialization, job attitudes, deviant work behaviours, leadership, teams and group dynamics, work-related stress and health, and organizational change and development.

Prerequisite(s): PSYC 2801.

Lectures three hours per week.

PSYC 3802 [0.5 credit]**Transition to Career**

Within the context of an active learning environment, examines traditional and current models in career psychology. Topics may include the concepts of change and transitions, self-assessments, vocational psychology, and workplace onboarding. Students will examine their personal and professional transition from university to the work world.

Includes: Experiential Learning Activity

Prerequisite(s): third or fourth year standing in Psychology.

Lectures three hours a week.

PSYC 3805 [1.0 credit]**Organizational Psychology (Honours Seminar)**

An introduction to theory and research in organizational psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2801, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3901 [0.5 credit]**Practicum in Psychology**

Experiential learning in psychology via field placement.

Students pursue personal learning outcomes focused

on the application of psychology within the community.

Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.

Includes: Experiential Learning Activity

Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3902 [0.5 credit]**Practicum in Psychology**

Experiential learning in psychology via field placement.

Students pursue personal learning outcomes focused

on the application of psychology within the community.

Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.

Includes: Experiential Learning Activity

Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3905 [1.0 credit]**Practicum in Psychology**

Experiential learning in psychology via field placement.

Students pursue personal learning outcomes focused

on the application of psychology within the community.

Assignments promote ongoing reflection and the sharing of what has been learned with colleagues.

Includes: Experiential Learning Activity

Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3999 [0.0 credit]**Co-operative Work Term**

Co-operative Work Term.

Includes: Experiential Learning Activity
Work Term.

PSYC 4001 [0.5 credit]**Special Topics in Psychology**

Each section of PSYC 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of PSYC 4001 but can register in each section only once.

Prerequisite(s): each section will have its own.

Lectures or seminars three hours a week.

PSYC 4003 [0.5 credit]**Origins of Modern Psychology**

An overview of the evolution of psychology, with an emphasis on psychology as a specialized area of knowledge and practice in the late-nineteenth and twentieth centuries. Topics covered may include the history of a particular period, content area, or cultural context.

Precludes additional credit for PSYC 2003.

Prerequisite(s): third or fourth-year standing in a Psychology Honours program.

Lectures or seminars three hours per week.

PSYC 4100 [0.5 credit]**Advanced Topics in Social Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in Social psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2100.

Lectures or seminars three hours a week.

PSYC 4235 [0.5 credit]**Psychology of Climate Change**

An examination of the role that psychological research plays in understanding people's feelings, thoughts, and behaviour in relation to climate change and its associated problems. Strategies and interventions that help people cope with climate change and promote eco-friendly behaviour will also be discussed.

Prerequisite(s): third or fourth-year standing and one PSYC at the 2000-level.

Lectures or seminars three hours a week.

PSYC 4301 [0.5 credit]**Advanced Topics in Health Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in health psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2301.

Lectures or seminars three hours a week.

PSYC 4330 [1.0 credit]**Community Mental Health and Well-Being**

An examination of theory, research, and the practice of approaches to support peers and their well-being. Students will apply the concepts learned during the seminars in field placements.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Psychology, Mental Health and Well-Being Stream.

Seminar three hours per week.

PSYC 4333 [0.5 credit]**Clinical Psychology: Assessment and Intervention**

An advanced seminar on clinical psychology and mental health. Students will learn about frequently used treatment modalities and common factors across treatments.

Research methodology and recent advances dealing with a variety of common mental disorders will also be reviewed and discussed.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Psychology and PSYC 3604.

Lecture or seminar three hours per week.

PSYC 4335 [0.5 credit]**Mental Health and Climate Change**

Climate change is a major global health threat that is related to mental health through changes to people's environment, physical security, and socioeconomic structures. Research focusing on the relationship between climate change and individuals' well-being will be discussed.

Prerequisite(s): third- or fourth-year standing and PSYC 2301.

Lectures or seminars three hours a week.

PSYC 4400 [0.5 credit]**Advanced Topics in Forensic Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in Forensic psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2400.

Lectures or seminars three hours a week.

PSYC 4403 [0.5 credit]**Female Offenders**

Feminist and social learning approaches to the assessment and treatment of female offenders. Theories and research relevant to selected patterns of law breaking and selected female offender types.

Prerequisite(s): third- or fourth-year standing and PSYC 3402.

Lectures or seminars three hours a week.

PSYC 4404 [0.5 credit]**Sex Offenders**

Theory and research concerning the etiology and maintenance of sexual offending; assessment, treatment, and management of sex offenders. Introduction to fundamental issues and controversies in the area.

Prerequisite(s): third- or fourth-year standing, PSYC 2400, and PSYC 3402.

Lectures or seminars three hours a week.

PSYC 4410 [0.5 credit]**Children and the Law**

This course will explore psychological factors affecting child witnesses and victims as they interact within the criminal justice system. The course will survey the intersection of psychology and law within the areas of eyewitness memory, police procedures, and the criminal justice system.

Prerequisite(s): fourth-year standing, and PSYC 2400 or PSYC 2500.

Lectures or seminars three hours a week.

PSYC 4500 [0.5 credit]**Advanced Topics in Developmental Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in developmental psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing, and one of PSYC 3500, PSYC 3505, PSYC 3506, PSYC 3507.

Lectures or seminars three hours a week.

PSYC 4600 [0.5 credit]**Advanced Topics in Personality Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in personality psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2600.

Lectures or seminars three hours a week.

PSYC 4700 [0.5 credit]**Advanced Topics in Cognitive Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in cognitive psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing, and PSYC 2700.

Lectures or seminars three hours a week.

PSYC 4801 [0.5 credit]**Occupational Health Psychology**

The application of psychological knowledge to enhance employee physical and mental health, safety and well-being, and more broadly, to enrich organizational life.

Students will be able to learn and analyze critically the relevant methodological, theoretical, and empirical Occupational Health Psychology literature.

Prerequisite(s): third or fourth-year standing and one of PSYC 2100, PSYC 2301, PSYC 2801.

Lectures or seminars three hours a week.

PSYC 4802 [0.5 credit]**Advanced Topics in Organizational Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in organizational psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2801.

Lectures or seminars three hours a week.

PSYC 4900 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest. Normally, students may not include more than one credit of independent study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department.

Mentored work.

PSYC 4902 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest.

Normally, students may not include more than one credit of independent study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department.

Mentored work.

PSYC 4907 [1.0 credit]**Thesis for B.Sc. with Honours in Psychology**

A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4906 (no longer offered).

Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700 or PSYC 3805; and permission of the Department.

Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.

PSYC 4908 [1.0 credit]**Thesis for B.A. with Honours in Psychology**

A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4905 (no longer offered).

Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700, PSYC 3805; and permission of the Department.

Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.

PSYC 4909 [1.0 credit]

Project for B.Sc. with Honours in Psychology

Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4906 (no longer offered), PSYC 4907, and PSYC 4908.

Prerequisite(s): fourth-year standing in B.Sc. (Honours) in Psychology, and PSYC 3000.

Seminars three hours a week.

PSYC 4910 [1.0 credit]

Project for B.A. with Honours in Psychology

Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4905 (no longer offered), PSYC 4907 and PSYC 4908.

Prerequisite(s): fourth-year standing in B.A (Honours) in Psychology, and PSYC 3000.

Seminars three hours a week.

Public Affairs and Policy Management

This section presents the requirements for programs in:

- Specialization in Communication and Policy Studies (Communication Technologies and Regulation) B.P.A.P.M. Honours
- Specialization in Communication and Policy Studies (Strategic Public Opinion) B.P.A.P.M. Honours
- Specialization in Development Policy Studies (Global Economic Relations) B.P.A.P.M. Honours
- Specialization in Development Policy Studies (Rights and Human Development) B.P.A.P.M. Honours
- Specialization in Development Policy Studies (Indigenous Policy) B.P.A.P.M. Honours
- Specialization in International Policy Studies (International Relations and Conflict) B.P.A.P.M. Honours
- Specialization in International Policy Studies (Security and Intelligence) B.P.A.P.M. Honours
- Specialization in Public Policy and Administration (Economic Policy) B.P.A.P.M. Honours
- Specialization in Public Policy and Administration (Environmental and Sustainable Energy Policy) B.P.A.P.M. Honours
- Specialization in Public Policy and Administration (Social Policy) B.P.A.P.M. Honours

- Specialization in Public Policy and Administration (Indigenous Policy) B.P.A.P.M. Honours

Graduate Pathways

Accelerated pathways or advanced standing with transfer of credits to graduate programs at Carleton University may be available to eligible BPAPM students. Please consult the Graduate Calendar for the pathway requirements for the MA degree in International Affairs offered by the Norman Paterson School of International Affairs, the MPPA degree offered by the School of Public Policy and Administration, the MPM degree offered by the Clayton H. Riddell Graduate Program in Political Management, and the MA degree in European, Russian and Eurasian Studies.

Program Requirements

Language Requirement for B.P.A.P.M.

Prior to graduation, students must satisfy a language proficiency requirement in one of the following ways:

1. successful completion of an approved French language credit (FREN 1100);
2. placement at a demonstrated competency level equivalent to satisfactory completion of FREN 1100 following a self-assessment questionnaire and interview administered by the Department of French (for students who already possess demonstrated capacity in French).

Students should note that they will be required to use one of their elective credits if they choose to satisfy the language requirement through an approved French language credit. Students registering in the Specialization in International Studies should note the additional language requirement.

Bachelor of Public Affairs and Policy Management (B.P.A.P.M. Honours)

Before the second year of study, students in this program must register in one of the specializations listed below.

Specialization in Communication and Policy Studies (Communication Technologies and Regulation)

B.P.A.P.M. Honours (20.0 credits)

Specialization in Communication and Policy Studies (Strategic Public Opinion)

B.P.A.P.M. Honours (20.0 credits)

A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in:	3.5
PAPM 1001 [0.5]	Policy: Analysis, Implementation, and Evaluation
PAPM 2001 [0.5]	Foundations of Public Policy: Political Thought
PAPM 2002 [0.5]	Foundations of Public Policy: Economic Thought
PAPM 3000 [0.5]	Policy Research
PAPM 4000 [0.5]	Capstone Seminar in Public Affairs and Policy Management
PAPM 4099 [0.5]	Policy Seminar
PSCI 2003 [0.5]	Canadian Political Institutions

2. 0.5 credit from:		0.5
COMS 2200 [0.5]	Big Data and Society	
COMS 2300 [0.5]	Communication as Propaganda	
COMS 2504 [0.5]	Language and Communication	
3. 0.5 credit from:		0.5
BUSI 2204 [0.5]	Basic Marketing	
BUSI 2400 [0.5]	Foundations of Information Systems	
JOUR 2501 [0.5]	Media Law	
SOCI 2035 [0.5]	Technology, Culture and Society	
4. 1.5 credits from:		1.5
ANTH 3010 [0.5]	Language, Culture, and Globalization	
ANTH 3037 [0.5]	Studies in Information Systems and Social Power	
BUSI 3205 [0.5]	Marketing Communications	
BUSI 3207 [0.5]	Marketing Research	
COMS 3108 [0.5]	Media Industries and the Network Society	
COMS 3302 [0.5]	Political Communication	
COMS 3308 [0.5]	Critical Studies in Advertising and Consumer Culture	
COMS 3310 [0.5]	Critical Perspectives of Public Relations	
COMS 3311 [0.5]	Media and Communication in Regional Contexts	
COMS 3401 [0.5]	Communications Regulation in Canada	
COMS 3403 [0.5]	Communication, Technology and Culture	
COMS 3411 [0.5]	Media and Social Activism	
LAWS 3005 [0.5]	Law and Regulation	
LAWS 3006 [0.5]	Mediation	
LAWS 3201 [0.5]	Business Enterprise Frameworks	
LAWS 3202 [0.5]	Intellectual Property	
LAWS 3501 [0.5]	Law in the Information Society	
LAWS 3503 [0.5]	Equality and Discrimination	
POLM 3000/ COMS 3100/ PSCI 3410 [0.5]	Introduction to Political Management	
PSCI 3108 [0.5]	Politics of Popular Culture	
PSCI 3402 [0.5]	Canadian Public Policy	
PSCI 3405 [0.5]	Comparative Public Policy Analysis	
PSCI 3406 [0.5]	Public Affairs and Media Strategies	
SOCI 3710 [0.5]	Introduction to Cultural Studies	
5. 1.0 credit from:		1.0
ANTH 4500 [0.5]	Advanced Studies in Culture and Symbols	
COMS 4316 [0.5]	Indigenous Media in Global Contexts	
COMS 4401 [0.5]	Global Internet Policy and Governance	
COMS 4406 [0.5]	Open Government and Communication	
JOUR 4504 [0.5]	Investigating Journalism: The Media and International Development	
LAWS 4402 [0.5]	Employment Dispute Resolution	
LAWS 4801 [0.5]	Risk and the Legal Process	

PSCI 4003 [0.5]	Politics and the Media	
PSCI 4702 [0.5]	Intermediate Research Methods for Applied Political Science	
6. 1.5 credits in:		1.5
For the policy stream in Communication Technologies and Regulation:		
COMS 3401 [0.5]	Communications Regulation in Canada	
COMS 3403 [0.5]	Communication, Technology and Culture	
LAWS 3005 [0.5]	Law and Regulation	
LAWS 3202 [0.5]	Intellectual Property	
LAWS 3501 [0.5]	Law in the Information Society	
For the policy stream in Strategic Public Opinion:		
COMS 3001 [0.5]	Quantitative Research in Communication	
COMS 3002 [0.5]	Qualitative Research in Communication	
COMS 3302 [0.5]	Political Communication	
POLM 3000/ COMS 3100/ PSCI 3410 [0.5]	Introduction to Political Management	
PSCI 3407 [0.5]	Public Opinion and Public Policy	
7. 1.5 credits in:		1.5
For the policy stream in Communication Technologies and Regulation:		
BUSI 4400 [0.5]	IS Management and Strategy	
BUSI 4404 [0.5]	IT Infrastructure	
COMS 4317 [0.5]	Digital Media and Global Network Society	
COMS 4405 [0.5]	The Networked Self	
COMS 4407 [0.5]	Communication and Critical Data Studies	
COMS 4410 [0.5]	Mobile Media	
COMS 4411 [0.5]	Algorithmic Culture	
COMS 4412 [0.5]	Game Studies	
ECON 3300 [0.5]	Public Policy Toward Business	
ECON 3850 [0.5]	Economics of Information and the Media	
IPAF 4900 [0.5]	Research Experience Course	
LAWS 4507 [0.5]	Administrative Law and Control	
LAWS 4510 [0.5]	Topics in Law, Policy and Government	
PAPM 4908 [1.0]	Honours Research Essay	
For the policy stream in Strategic Public Opinion:		
COMS 4312 [0.5]	Crisis and Risk Communication	
COMS 4317 [0.5]	Digital Media and Global Network Society	
COMS 4403 [0.5]	Digital Media Industries	
COMS 4405 [0.5]	The Networked Self	
ECON 3300 [0.5]	Public Policy Toward Business	
IPAF 4900 [0.5]	Research Experience Course	
JOUR 4001 [0.5]	Journalism Now - and Next	
PAPM 4908 [1.0]	Honours Research Essay	
POLM 4010 [0.5]	Polling and Opinion Research	
POLM 4012 [0.5]	Advocacy and Government Relations in Canada	
PSCI 4003 [0.5]	Politics and the Media	
PSCI 4107 [0.5]	Political Participation in Canada	

PSCI 4204 [0.5]	Elections	
PSCI 4209 [0.5]	Westminster Democracies: Parliaments, Parties and Elections	
PSCI 4404 [0.5]	The Design and Evolution of Public Institutions	
PSCI 4407 [0.5]	Public Policy: Content and Creation	
PSCI 4408 [0.5]	Public Affairs Management and Analysis	
B. Credits Not Included in the Major CGPA (10.0 credits)		
8. 1.0 credit in:		1.0
PSCI 2701 [0.5]	Introduction to Research Methods in Political Science	
PSCI 2702 [0.5]	Quantitative Research Methods in Political Science	
9. 1.0 credit in:		1.0
LAWS 2501 [0.5]	Law, State and Constitution	
LAWS 2502 [0.5]	Law, State and Citizen	
10. 1.5 credits in:		1.5
ECON 1001 [0.5]	Introduction to Microeconomics	
ECON 1002 [0.5]	Introduction to Macroeconomics	
BUSI 3602 [0.5]	Designing Organizational Systems: An Overview	
11. 0.5 credit from:		0.5
PSCI 2002 [0.5]	Canadian Politics and Civil Society	
PSCI 2101 [0.5]	Comparative Politics of the Global North	
PSCI 2102 [0.5]	Comparative Politics of the Global South	
12. 1.0 credit from:		1.0
HIST 1002 [1.0]	Europe in the 20th Century	
HIST 1301 [0.5]	Conflict and Change in Early Canadian History	
HIST 1302 [0.5]	Rethinking Modern Canadian History	
HIST 1707 [1.0]	World History	
HIST 2301 [0.5]	Canadian Political History	
HIST 2311 [0.5]	Environmental History of Canada	
13. 0.5 credit from:		0.5
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies	
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters	
14. 4.5 credits in free electives		4.5
Total Credits		20.0

**Specialization in Development Policy Studies
(Global Economic Relations) B.P.A.P.M. Honours
(20.0 credits)**

**Specialization in Development Policy Studies
(Rights and Human Development) B.P.A.P.M.
Honours (20.0 credits)**

**Specialization in Development Policy Studies
(Indigenous Policy) B.P.A.P.M Honours (20.0
credits)**

A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in:		3.5
PAPM 1001 [0.5]	Policy: Analysis, Implementation, and Evaluation	

PAPM 2001 [0.5]	Foundations of Public Policy: Political Thought	
PAPM 2002 [0.5]	Foundations of Public Policy: Economic Thought	
PAPM 3000 [0.5]	Policy Research	
PAPM 4000 [0.5]	Capstone Seminar in Public Affairs and Policy Management	
PAPM 4099 [0.5]	Policy Seminar	
PSCI 2003 [0.5]	Canadian Political Institutions	
2. 1.0 credit in:		1.0
PSCI 2601 [0.5]	International Relations: Global Politics	
or PSCI 2602 [0.5]	International Relations: Global Political Economy	
SOWK 3206 [0.5]	Community Development and Social Change in an International Context	
3. 1.0 credit from:		1.0
ECON 3508 [0.5]	Introduction to Economic Development	
ECON 3509 [0.5]	Development Planning and Project Evaluation	
ECON 3601 [0.5]	Introduction to International Trade	
ECON 3602 [0.5]	International Monetary Problems	
LAWS 2105 [0.5]	Social Justice and Human Rights	
PSCI 3307 [0.5]	Politics of Human Rights	
4. 1.0 credit from:		1.0
LAWS 4102 [0.5]	Controversies in Rights Theory	
LAWS 4200 [0.5]	International Economic Law	
LAWS 4605 [0.5]	Topics in International Law	
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice	
PSCI 4105 [0.5]	Selected Problems in Development in the Global South	
PSCI 4505 [0.5]	Transitions to Democracy	
PSCI 4603 [0.5]	Analysis of International Political Economy	
PSCI 4604 [0.5]	Selected Problems in International Political Economy	
PSCI 4805 [0.5]	Political Economy of Global Money and Finance	
5. 0.5 credit in:		0.5
For the policy stream in Global Economic Relations:		
INAF 4401 [0.5]	Topics in Global Economic Relations	
For the policy stream in Rights and Human Development:		
INAF 4301 [0.5]	Topics in Rights and Human Development	
For the policy stream in Indigenous Policy:		
0.5 credits in Indigenous Policy stream electives at the 4000-level		
6. 3.0 credits in policy stream electives (at least 1.0 credit of which must be at the 4000 level):		3.0
For the policy stream in Global Economic Relations:		
ANTH 2850 [0.5]	Development and Underdevelopment	
BUSI 3706 [0.5]	International Business Negotiations	
ECON 3370 [0.5]	The Economics of Migration	
ECON 3601 [0.5]	Introduction to International Trade	

ECON 3602 [0.5]	International Monetary Problems	PSCI 4800 [0.5]	Advanced International Relations Theory
ECON 3804 [0.5]	Environmental Economics	PSCI 4805 [0.5]	Political Economy of Global Money and Finance
ECON 4508 [0.5]	International Aspects of Economic Development	PSCI 4808 [0.5]	Global Environmental Politics
ECON 4601 [0.5]	International Trade Theory and Policy	PSCI 4819 [0.5]	Latin America and the World
ECON 4602 [0.5]	International Monetary Theory and Policy	SOCI 3027 [0.5]	Globalization and Human Rights
GEOG 2200 [0.5]	Global Connections	TSES 4011 [0.5]	Technology and Society: Development
GEOG 3024 [0.5]	Understanding Globalization	For the policy stream in Rights and Human Development:	
GEOG 3209 [0.5]	Sustainability and Environment in the South	ECON 3380 [0.5]	The Economics of Gender and Ethnicity
GEOG 3404 [0.5]	Geographies of Economic Development	ECON 3508 [0.5]	Introduction to Economic Development
GEOG 4024 [0.5]	Seminar in Globalization	ECON 3509 [0.5]	Development Planning and Project Evaluation
HIST 3217 [0.5]	Empire and Globalization	ECON 3804 [0.5]	Environmental Economics
HIST 3306 [0.5]	Canada's International Policies	EURR 4008 [0.5]	Nationalism in Russia and Eurasia
INAF 3001 [0.5]	Understanding Policy in a Global Context	GEOG 2200 [0.5]	Global Connections
INAF 4101 [0.5]	Topics in Conflict and Conflict Management	GEOG 3023 [0.5]	Cities in a Global World
INAF 4201 [0.5]	Topics in Security and Intelligence	GEOG 3025 [0.5]	Geographies of Selected Regions
INAF 4301 [0.5]	Topics in Rights and Human Development	GEOG 3026 [0.5]	Topics in the Geography of Canada
IPAF 4900 [0.5]	Research Experience Course	GEOG 3209 [0.5]	Sustainability and Environment in the South
JOUR 4504 [0.5]	Investigating Journalism: The Media and International Development	GEOG 3404 [0.5]	Geographies of Economic Development
LAWS 3207 [0.5]	International Transactions	HIST 3217 [0.5]	Empire and Globalization
LAWS 3208 [0.5]	International Trade Regulation	HIST 3306 [0.5]	Canada's International Policies
LAWS 3602 [0.5]	International Human Rights	HUMR 3401 [0.5]	Histories of Persecution and Genocide
LAWS 4200 [0.5]	International Economic Law	HUMR 3501 [0.5]	Social, Economic and Cultural Rights
PAPM 4908 [1.0]	Honours Research Essay	HUMR 3504 [0.5]	Public Health and Human Rights
PSCI 3100 [0.5]	Politics of Development in Africa	HUMR 4201 [0.5]	Citizenship and Human Rights
PSCI 3102 [0.5]	Politics of Development of China	HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World
PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia	HUMR 4404 [0.5]	Rights of Refugees and Displaced Persons
PSCI 3105 [0.5]	Imperialism	HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
PSCI 3204 [0.5]	Politics of Latin America	INAF 4101 [0.5]	Topics in Conflict and Conflict Management
PSCI 3205 [0.5]	Mexican Politics	INAF 4201 [0.5]	Topics in Security and Intelligence
PSCI 3207 [0.5]	The Government and Politics of European Integration	INAF 4401 [0.5]	Topics in Global Economic Relations
PSCI 3405 [0.5]	Comparative Public Policy Analysis	IPAF 4900 [0.5]	Research Experience Course
PSCI 3502 [0.5]	Gender and Politics: Global South	LAWS 2105 [0.5]	Social Justice and Human Rights
PSCI 3600 [0.5]	International Institutions	LAWS 3503 [0.5]	Equality and Discrimination
PSCI 3601 [0.5]	Theories of International Politics	LAWS 3504 [0.5]	Law and Aboriginal Peoples
PSCI 3606 [0.5]	Canadian Foreign Policy	LAWS 3509 [0.5]	The Charter of Rights Topics
PSCI 3608 [0.5]	Migration Governance	LAWS 3604 [0.5]	International Organizations
PSCI 3609 [0.5]	Global Politics of Food	LAWS 4101 [0.5]	Contemporary Justice Theories
PSCI 3703 [0.5]	Governing in the Global Economy	LAWS 4102 [0.5]	Controversies in Rights Theory
PSCI 3801 [0.5]	Environmental Politics	LAWS 4105 [0.5]	Global Justice Theory
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa	LAWS 4601 [0.5]	Transnational Law and Human Rights
PSCI 4603 [0.5]	Analysis of International Political Economy	LAWS 4603 [0.5]	Transitional Justice
PSCI 4604 [0.5]	Selected Problems in International Political Economy	LAWS 4605 [0.5]	Topics in International Law
PSCI 4605 [0.5]	Gender in International Relations		
PSCI 4610 [0.5]	Politics of Migration Management		

LAWS 4606 [0.5]	International Law of Armed Conflict	INDG 4020 [0.5]	Practicum
LAWS 4607 [0.5]	Immigration and Refugee Law	INDG 4905 [0.5]	Directed Studies I
LAWS 4610 [0.5]	Special Topics in Transnational Law and Human Rights	IPAF 4900 [0.5]	Research Experience Course
LAWS 4800 [0.5]	Environment and Social Justice	LAWS 3504 [0.5]	Law and Aboriginal Peoples
PAPM 4908 [1.0]	Honours Research Essay	LAWS 4504 [0.5]	Indigenous Criminal Justice
PHIL 2103 [0.5]	Philosophy of Human Rights	PADM 4224 [0.5]	Aboriginal Policy
PSCI 3105 [0.5]	Imperialism	PAPM 4908 [1.0]	Honours Research Essay
PSCI 3107 [0.5]	The Causes of War	PSCI 4206 [0.5]	Indigenous Politics of North America
PSCI 3307 [0.5]	Politics of Human Rights	SOWK 4102 [0.5]	Indigenous Peoples and Social Policy
PSCI 3600 [0.5]	International Institutions	B. Credits Not Included in the Major CGPA (10.0 credits)	
PSCI 3601 [0.5]	Theories of International Politics	7. 1.0 credit in:	1.0
PSCI 3606 [0.5]	Canadian Foreign Policy	PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 3801 [0.5]	Environmental Politics	PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
PSCI 3802 [0.5]	Globalization and Human Rights	8. 1.5 credits in:	1.5
PSCI 3805 [0.5]	Politics of Race	BUSI 3602 [0.5]	Designing Organizational Systems: An Overview
PSCI 4104 [0.5]	Development in the Global South - Theory and Practice	ECON 1001 [0.5]	Introduction to Microeconomics
PSCI 4105 [0.5]	Selected Problems in Development in the Global South	ECON 1002 [0.5]	Introduction to Macroeconomics
PSCI 4109 [0.5]	The Politics of the Canadian Charter of Rights and Freedoms	9. 0.5 credit from:	0.5
PSCI 4206 [0.5]	Indigenous Politics of North America	PSCI 2002 [0.5]	Canadian Politics and Civil Society
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa	PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 4500 [0.5]	Gender and Globalization	PSCI 2102 [0.5]	Comparative Politics of the Global South
PSCI 4505 [0.5]	Transitions to Democracy	10. 1.0 credit from:	1.0
PSCI 4605 [0.5]	Gender in International Relations	HIST 1002 [1.0]	Europe in the 20th Century
PSCI 4807 [0.5]	Politics of Citizenship and Migration	HIST 1301 [0.5]	Conflict and Change in Early Canadian History
PSCI 4808 [0.5]	Global Environmental Politics	HIST 1302 [0.5]	Rethinking Modern Canadian History
PSCI 4817 [0.5]	International Politics of Forced Migration	HIST 1707 [1.0]	World History
SOCI 3027 [0.5]	Globalization and Human Rights	HIST 2301 [0.5]	Canadian Political History
SOWK 3207 [0.5]	Human Rights Practice in Civil Society	HIST 2311 [0.5]	Environmental History of Canada
For the policy stream in Indigenous Policy:			
COMS 4316 [0.5]	Indigenous Media in Global Contexts	11. 0.5 credit from:	0.5
HIST 3510 [0.5]	Indigenous Peoples of Canada	INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies
HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements	INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
INDG 2011 [0.5]	Contemporary Indigenous Studies	12. 1.0 credit in:	1.0
INDG 2012 [0.5]	Anishinaabe Studies	For the policy stream in Global Economic Relations:	
INDG 2013 [0.5]	Haudenosaunee Studies	LAWS 2601 [0.5]	Public International Law
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing	LAWS 3604 [0.5]	International Organizations
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality	For the policy stream in Rights and Human Development:	
INDG 3001 [0.5]	Indigenous Governance	LAWS 2601 [0.5]	Public International Law
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	LAWS 3602 [0.5]	International Human Rights
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy	For the policy stream in Indigenous Policy:	
INDG 3901 [0.5]	Selected Topics in Indigenous Studies	LAWS 2501 [0.5]	Law, State and Constitution
INDG 4001 [0.5]	Indigeneity in the City	LAWS 2502 [0.5]	Law, State and Citizen
INDG 4011 [0.5]	Indigenous Representations	LAWS 3504 [0.5]	Law and Aboriginal Peoples
INDG 4015 [0.5]	Land as a Relation	13. 4.5 credits in free electives	4.5
Total Credits			20.0

**Specialization in International Policy Studies
(International Relations and Conflict)
B.P.A.P.M. Honours (20.0 credits)**

**Specialization in International Policy Studies
(Security and Intelligence)
B.P.A.P.M. Honours (20.0 credits)**

A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in:	3.5
PAPM 1001 [0.5]	Policy: Analysis, Implementation, and Evaluation
PAPM 2001 [0.5]	Foundations of Public Policy: Political Thought
PAPM 2002 [0.5]	Foundations of Public Policy: Economic Thought
PAPM 3000 [0.5]	Policy Research
PAPM 4000 [0.5]	Capstone Seminar in Public Affairs and Policy Management
PAPM 4099 [0.5]	Policy Seminar
PSCI 2003 [0.5]	Canadian Political Institutions
2. 1.0 credit in:	1.0
INAF 3001 [0.5]	Understanding Policy in a Global Context
INAF 3002 [0.5]	Applied Policy in a Global Context
3. 0.5 credit from:	0.5
PSCI 2601 [0.5]	International Relations: Global Politics
PSCI 2602 [0.5]	International Relations: Global Political Economy
4. 0.5 credit from:	0.5
ECON 3601 [0.5]	Introduction to International Trade
ECON 3602 [0.5]	International Monetary Problems
5. 1.0 credit from:	1.0
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3607 [0.5]	North American Security and Defence Policy
6. 1.0 credit from:	1.0
For the policy stream in International Relations and Conflict:	
LAWS 4105 [0.5]	Global Justice Theory
LAWS 4106 [0.5]	Law and Violence
LAWS 4606 [0.5]	International Law of Armed Conflict
PSCI 4505 [0.5]	Transitions to Democracy
PSCI 4800 [0.5]	Advanced International Relations Theory
PSCI 4801 [0.5]	Selected Problems in Global Politics
For the policy stream in Security and Intelligence:	
LAWS 4106 [0.5]	Law and Violence
LAWS 4309 [0.5]	State Security and Dissent
LAWS 4606 [0.5]	International Law of Armed Conflict
PSCI 4008 [0.5]	National Security and Intelligence in the Modern State
PSCI 4801 [0.5]	Selected Problems in Global Politics
7. 0.5 credit in:	0.5

For the policy stream in International Relations and Conflict:

INAF 4101 [0.5]	Topics in Conflict and Conflict Management
For the policy stream in Security and Intelligence:	
INAF 4201 [0.5]	Topics in Security and Intelligence
8. 2.0 credits in policy stream electives from:	2.0
For the policy stream in International Relations and Conflict:	
ECON 3804 [0.5]	Environmental Economics
ECON 3808 [0.5]	The Economics of Transition
EURR 4008 [0.5]	Nationalism in Russia and Eurasia
EURR 4102 [0.5]	The Balkans since 1989
EURR 4107 [0.5]	Russia's Regional and Global Ambitions
EURR 4208 [0.5]	Foreign Policies of Soviet Successor States
GEOG 3024 [0.5]	Understanding Globalization
GINS 4090 [0.5]	Honours Seminar in Global and International Studies
HIST 3217 [0.5]	Empire and Globalization
HIST 3304 [0.5]	Canada-United States Relations
HIST 3306 [0.5]	Canada's International Policies
HIST 3800 [0.5]	International History 1914-41
HIST 3801 [0.5]	International History 1941-90
HIST 3905 [0.5]	Topics in International History
HUMR 3401 [0.5]	Histories of Persecution and Genocide
HUMR 3504 [0.5]	Public Health and Human Rights
INAF 4201 [0.5]	Topics in Security and Intelligence
INAF 4301 [0.5]	Topics in Rights and Human Development
INAF 4401 [0.5]	Topics in Global Economic Relations
IPAF 4900 [0.5]	Research Experience Course
LAWS 3208 [0.5]	International Trade Regulation
LAWS 3602 [0.5]	International Human Rights
LAWS 4105 [0.5]	Global Justice Theory
LAWS 4601 [0.5]	Transnational Law and Human Rights
LAWS 4603 [0.5]	Transitional Justice
LAWS 4605 [0.5]	Topics in International Law
LAWS 4606 [0.5]	International Law of Armed Conflict
LAWS 4610 [0.5]	Special Topics in Transnational Law and Human Rights
PAPM 4908 [1.0]	Honours Research Essay
PSCI 3101 [0.5]	Politics of War in Africa
PSCI 3105 [0.5]	Imperialism
PSCI 3107 [0.5]	The Causes of War
PSCI 3207 [0.5]	The Government and Politics of European Integration
PSCI 3209 [0.5]	Reconstruction and Transformation in Europe and Eurasia
PSCI 3600 [0.5]	International Institutions
PSCI 3601 [0.5]	Theories of International Politics
PSCI 3606 [0.5]	Canadian Foreign Policy
PSCI 3608 [0.5]	Migration Governance
PSCI 3702 [0.5]	Israeli-Palestinian Relations
PSCI 3703 [0.5]	Governing in the Global Economy

PSCI 3801 [0.5]	Environmental Politics	LAWS 4610 [0.5]	Special Topics in Transnational Law and Human Rights
PSCI 3802 [0.5]	Globalization and Human Rights	PAPM 4908 [1.0]	Honours Research Essay
PSCI 4207 [0.5]	Globalization, Adjustment and Democracy in Africa	PSCI 3107 [0.5]	The Causes of War
PSCI 4500 [0.5]	Gender and Globalization	PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area	PSCI 3603 [0.5]	Strategic Thought and International Security
PSCI 4504 [0.5]	Politics of the Caucasus and Caspian Basin	PSCI 3607 [0.5]	North American Security and Defence Policy
PSCI 4601 [0.5]	Foreign Policies of Soviet Successor States	PSCI 3608 [0.5]	Migration Governance
PSCI 4603 [0.5]	Analysis of International Political Economy	PSCI 3802 [0.5]	Globalization and Human Rights
PSCI 4604 [0.5]	Selected Problems in International Political Economy	PSCI 4008 [0.5]	National Security and Intelligence in the Modern State
PSCI 4605 [0.5]	Gender in International Relations	PSCI 4601 [0.5]	Foreign Policies of Soviet Successor States
PSCI 4606 [0.5]	American Foreign Policy	PSCI 4606 [0.5]	American Foreign Policy
PSCI 4608 [0.5]	European Integration and European Security	PSCI 4608 [0.5]	European Integration and European Security
PSCI 4800 [0.5]	Advanced International Relations Theory	PSCI 4800 [0.5]	Advanced International Relations Theory
PSCI 4801 [0.5]	Selected Problems in Global Politics	PSCI 4801 [0.5]	Selected Problems in Global Politics
PSCI 4803 [0.5]	Foreign Policies of Major East Asian Powers	PSCI 4803 [0.5]	Foreign Policies of Major East Asian Powers
PSCI 4805 [0.5]	Political Economy of Global Money and Finance	PSCI 4806 [0.5]	Transatlantic Security Issues
PSCI 4807 [0.5]	Politics of Citizenship and Migration	B. Credits Not Included in the Major CGPA (10.0 credits)	
PSCI 4808 [0.5]	Global Environmental Politics	9. 1.0 credit in:	1.0
PSCI 4817 [0.5]	International Politics of Forced Migration	PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
For the policy stream in Security and Intelligence:		PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
EURR 4008 [0.5]	Nationalism in Russia and Eurasia	10. 1.0 credit in:	1.0
EURR 4104 [0.5]	European Integration and European Security	LAWS 2601 [0.5]	Public International Law
EURR 4107 [0.5]	Russia's Regional and Global Ambitions	LAWS 3604 [0.5]	International Organizations
GEOG 3024 [0.5]	Understanding Globalization	11. 1.5 credits in:	1.5
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	ECON 1001 [0.5]	Introduction to Microeconomics
HIST 3217 [0.5]	Empire and Globalization	ECON 1002 [0.5]	Introduction to Macroeconomics
HIST 3304 [0.5]	Canada-United States Relations	BUSI 3602 [0.5]	Designing Organizational Systems: An Overview
HIST 3306 [0.5]	Canada's International Policies	12. 0.5 credit from:	0.5
HIST 3800 [0.5]	International History 1914-41	PSCI 2002 [0.5]	Canadian Politics and Civil Society
HIST 3801 [0.5]	International History 1941-90	PSCI 2101 [0.5]	Comparative Politics of the Global North
HIST 3905 [0.5]	Topics in International History	PSCI 2102 [0.5]	Comparative Politics of the Global South
INAF 4101 [0.5]	Topics in Conflict and Conflict Management	13. 1.0 credit from:	1.0
INAF 4301 [0.5]	Topics in Rights and Human Development	HIST 1002 [1.0]	Europe in the 20th Century
INAF 4401 [0.5]	Topics in Global Economic Relations	HIST 1301 [0.5]	Conflict and Change in Early Canadian History
IPAF 4900 [0.5]	Research Experience Course	HIST 1302 [0.5]	Rethinking Modern Canadian History
LAWS 4102 [0.5]	Controversies in Rights Theory	HIST 1707 [1.0]	World History
LAWS 4106 [0.5]	Law and Violence	HIST 2301 [0.5]	Canadian Political History
LAWS 4304 [0.5]	Policing and Social Surveillance	HIST 2311 [0.5]	Environmental History of Canada
LAWS 4309 [0.5]	State Security and Dissent	14. 0.5 credit from:	0.5
LAWS 4601 [0.5]	Transnational Law and Human Rights	INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies
LAWS 4605 [0.5]	Topics in International Law	INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters

15. 4.5 credits in free electives 4.5

C. Additional Requirement

16. In addition to satisfying the French language requirement, students must successfully complete 1.0 credit in a language or possess an equivalent level of proficiency as demonstrated by successfully completing a language test. The language may be either French at a level higher than FREN 1100, or, with the permission of the Director, another language directly relevant to their studies. Students registered in the International Policy Studies specialization will be required to use one of their elective credits if they satisfy this additional language requirement through course work.

Total Credits 20.0

Specialization in Public Policy and Administration (Economic Policy)

B.P.A.P.M. Honours (20.0 credits)

Specialization in Public Policy and Administration (Environmental and Sustainable Energy Policy)

B.P.A.P.M. Honours (20.0 credits)

Specialization in Public Policy and Administration (Social Policy)

B.P.A.P.M. Honours (20.0 credits)

Specialization in Public Policy and Administration (Indigenous Policy)

B.P.A.P.M Honours (20.0 credits)

A. Credits Included in the Major (10.0 credits)

1. 3.5 credits in: 3.5

PAPM 1001 [0.5] Policy: Analysis, Implementation, and Evaluation

PAPM 2001 [0.5] Foundations of Public Policy: Political Thought

PAPM 2002 [0.5] Foundations of Public Policy: Economic Thought

PAPM 3000 [0.5] Policy Research

PAPM 4000 [0.5] Capstone Seminar in Public Affairs and Policy Management

PAPM 4099 [0.5] Policy Seminar

PSCI 2003 [0.5] Canadian Political Institutions

2. 1.0 credit from: 1.0

ECON 2001 [0.5] Intermediate Microeconomics for Non-Mathematical Majors

ECON 2101 [0.5] Intermediate Macroeconomics for Non-Mathematical Majors

ECON 3201 [0.5] Economic Thought and Policy in Canada

ECON 3220 [0.5] Canadian Economic History

ECON 3230 [0.5] Selected Topics in Economic History

ECON 3300 [0.5] Public Policy Toward Business

ECON 3360 [0.5] Introduction to Labour Economics

ECON 3370 [0.5] The Economics of Migration

ECON 3380 [0.5] The Economics of Gender and Ethnicity

ECON 3420 [0.5] Economic Theories of Federalism

ECON 3460 [0.5] Introduction to Health Economics

ECON 3801 [0.5] Regional Economics

ECON 3803 [0.5] The Economics of Natural Resources

ECON 3804 [0.5] Environmental Economics

ECON 3820 [0.5] Topics in Canadian Economic Policy

ECON 3850 [0.5] Economics of Information and the Media

ECON 3856 [0.5] Housing Economics

ECON 3864 [0.5] Transportation Economics

HIST 3220 [0.5] Canadian Economic History

3. 1.5 credit in: 1.5

ECON 3403 [0.5] Introduction to Public Economics: Expenditures

ECON 3405 [0.5] Introduction to Public Economics: Taxation

PADM 3105 [0.5] Management in the Public Sector

4. 0.5 credit in: 0.5

PADM 4230 [0.5] Ethics for Public Policy

5. 0.5 credit in: 0.5

For the policy stream in Economic Policy:

LAWS 3506 [0.5] Administrative Law

PSCI 3006 [0.5] Social Power in Canadian Politics

PSCI 3401 [0.5] Canadian Public Administration

PSCI 3402 [0.5] Canadian Public Policy

For the policy stream in Environmental and Sustainable Energy Policy:

ECON 3803 [0.5] The Economics of Natural Resources

ECON 3804 [0.5] Environmental Economics

ENST 3022/ GEOG 3022 [0.5] Environmental and Natural Resources

LAWS 3800 [0.5] Law of Environmental Quality

For the policy stream in Social Policy:

SOWK 3100 [0.5] Social Policy and Administration

For the policy stream in Indigenous Policy:

HIST 3510 [0.5] Indigenous Peoples of Canada

HIST 3511 [0.5] Themes in Indigenous History

LAWS 3504 [0.5] Law and Aboriginal Peoples

6. 3.0 credits in policy stream electives: 3.0

For the policy stream in Economic Policy:

3.0 credits from Economic Policy electives list below, including at least 0.5 credit in PADM or ECON and 1.0 credit at the 4000 level:

BUSI 3102 [0.5] Introduction to Human Resources Management

BUSI 4105 [0.5] Managing Change

BUSI 4108 [0.5] Organizational Learning

BUSI 4607 [0.5] Management of Technology and Innovation

BUSI 4704 [0.5] The Business Environment in Europe

ECON 3220 [0.5] Canadian Economic History

ECON 3230 [0.5] Selected Topics in Economic History

ECON 3300 [0.5] Public Policy Toward Business

ECON 3360 [0.5] Introduction to Labour Economics

ECON 3365 [0.5] Introduction to Industrial Relations

ECON 3370 [0.5] The Economics of Migration

ECON 3420 [0.5] Economic Theories of Federalism

ECON 3450 [0.5]	Political Economy in the Modern State	GEOG 3206 [0.5]	Health, Environment, and Society
ECON 3460 [0.5]	Introduction to Health Economics	GEOG 3209 [0.5]	Sustainability and Environment in the South
ECON 3508 [0.5]	Introduction to Economic Development	GEOG 4004 [0.5]	Environmental Impact Assessment
ECON 3600 [0.5]	Introduction to International Economics	GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change
ECON 3601 [0.5]	Introduction to International Trade	HUMR 3503 [0.5]	Global Environmental Justice
ECON 3607 [0.5]	Monetary and Financial Institutions	IPAF 4900 [0.5]	Research Experience Course
ECON 3801 [0.5]	Regional Economics	LAWS 3005 [0.5]	Law and Regulation
ECON 3803 [0.5]	The Economics of Natural Resources	LAWS 3800 [0.5]	Law of Environmental Quality
ECON 3807 [0.5]	European Economic Integration	LAWS 4507 [0.5]	Administrative Law and Control
ECON 3820 [0.5]	Topics in Canadian Economic Policy	PADM 4220 [0.5]	Regulation and Public Policy
ECON 3860 [0.5]	Agricultural Economics	PADM 4611 [0.5]	Science and Technology Policies
ECON 3870 [0.5]	Comparative Economic Systems	PADM 4612 [0.5]	Industrial Policy, Innovation and Sustainable Production
GEOG 3404 [0.5]	Geographies of Economic Development	PADM 4615 [0.5]	Politics and Policy of Energy in Canada
IPAF 4900 [0.5]	Research Experience Course	PADM 4616 [0.5]	Environmental Policy
LAWS 3005 [0.5]	Law and Regulation	PAPM 4908 [1.0]	Honours Research Essay
LAWS 3201 [0.5]	Business Enterprise Frameworks	PHIL 2380 [0.5]	Introduction to Environmental Ethics
LAWS 3202 [0.5]	Intellectual Property	PSCI 3103 [0.5]	State, Society and Economy in Northeast Asia
LAWS 3205 [0.5]	Consumer Law	PSCI 3402 [0.5]	Canadian Public Policy
LAWS 3208 [0.5]	International Trade Regulation	PSCI 3406 [0.5]	Public Affairs and Media Strategies
LAWS 3401 [0.5]	Employment Law	PSCI 3703 [0.5]	Governing in the Global Economy
LAWS 3405 [0.5]	Labour Law	PSCI 3801 [0.5]	Environmental Politics
LAWS 4200 [0.5]	International Economic Law	PSCI 4404 [0.5]	The Design and Evolution of Public Institutions
LAWS 4507 [0.5]	Administrative Law and Control	PSCI 4603 [0.5]	Analysis of International Political Economy
PADM 4214 [0.5]	Budgetary Policy in the Public Sector	PSCI 4604 [0.5]	Selected Problems in International Political Economy
PADM 4220 [0.5]	Regulation and Public Policy	PSCI 4805 [0.5]	Political Economy of Global Money and Finance
PADM 4225 [0.5]	Trade Policy	TSES 3002 [0.5]	Energy and Sustainability
PADM 4226 [0.5]	Tax Policy	TSES 4001 [0.5]	Technology and Society: Risk
PADM 4612 [0.5]	Industrial Policy, Innovation and Sustainable Production	TSES 4007 [0.5]	Product Life Cycle Analysis
PAPM 4908 [1.0]	Honours Research Essay	TSES 4008 [0.5]	Environmentally Harmonious Lifestyles
PSCI 3402 [0.5]	Canadian Public Policy		
PSCI 3406 [0.5]	Public Affairs and Media Strategies		
PSCI 4603 [0.5]	Analysis of International Political Economy		
PSCI 4805 [0.5]	Political Economy of Global Money and Finance		
For the policy stream in Environmental and Sustainable Energy Policy:			
3.0 credits from the Environmental and Sustainable Energy electives list below, including 1.0 credit at the 4000 level:			
BUSI 3119 [0.0]	Business and Environmental Sustainability	ECON 3360 [0.5]	Introduction to Labour Economics
ECON 3300 [0.5]	Public Policy Toward Business	ECON 3460 [0.5]	Introduction to Health Economics
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	GEOG 3023 [0.5]	Cities in a Global World
ENST 3022/ GEOG 3022 [0.5]	Environmental and Natural Resources	GEOG 3206 [0.5]	Health, Environment, and Society
ENST 4006 [0.5]	Environmental Policy Analysis	GEOG 3501 [0.5]	Geographies of the Canadian North
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	HIST 3510 [0.5]	Indigenous Peoples of Canada
GEOG 3023 [0.5]	Cities in a Global World	HLTH 3103 [0.5]	Health Policy and Canada's Health Care System
		IPAF 4900 [0.5]	Research Experience Course
		LAWS 3001 [0.5]	Women and the Legal Process
		LAWS 3503 [0.5]	Equality and Discrimination
		LAWS 3504 [0.5]	Law and Aboriginal Peoples
		LAWS 3506 [0.5]	Administrative Law
		LAWS 3508 [0.5]	Health Law
		LAWS 4507 [0.5]	Administrative Law and Control

LAWS 4607 [0.5]	Immigration and Refugee Law
PADM 4213 [0.5]	Gender and Public Policy
PADM 4221 [0.5]	Health Policy in Canada
PADM 4224 [0.5]	Aboriginal Policy
PADM 4227 [0.5]	Education Policy
PADM 4228 [0.5]	Social Policy
PADM 4817 [0.5]	Health Policy in Developing Countries
PAPM 4908 [1.0]	Honours Research Essay
PSCI 3405 [0.5]	Comparative Public Policy Analysis
PSCI 3402 [0.5]	Canadian Public Policy
PSCI 3406 [0.5]	Public Affairs and Media Strategies
PSCI 4006 [0.5]	Legislatures and Representation in Canada
PSCI 4103 [0.5]	The Modern State
PSCI 4403 [0.5]	Reproductive Rights Policy in North America
PSCI 4506 [0.5]	Women and Politics in North America
PSCI 4610 [0.5]	Politics of Migration Management
SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
SOCI 3300 [0.5]	Studies in the Sociology of Education
SOWK 4102 [0.5]	Indigenous Peoples and Social Policy
SOWK 4103 [0.5]	Practice and Policy in Immigration
For the policy stream in Indigenous Policy:	
3.0 credits from the Indigenous Policy electives list below, including 1.0 credit at the 4000 level:	
COMS 4316 [0.5]	Indigenous Media in Global Contexts
HIST 3510 [0.5]	Indigenous Peoples of Canada
HUMR 4502 [0.5]	Global Indigenous Knowledges and Movements
INDG 2011 [0.5]	Contemporary Indigenous Studies
INDG 2012 [0.5]	Anishinaabe Studies
INDG 2013 [0.5]	Haudenosaunee Studies
INDG 2015 [0.5]	Indigenous Ecological Ways of Knowing
INDG 2020 [0.5]	Decolonizing Gender, Sex, and Sexuality
INDG 3001 [0.5]	Indigenous Governance
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence
INDG 3015 [0.5]	Indigenous Ecological Ways of Knowing and the Academy
INDG 3901 [0.5]	Selected Topics in Indigenous Studies
INDG 4001 [0.5]	Indigeneity in the City
INDG 4011 [0.5]	Indigenous Representations
INDG 4015 [0.5]	Land as a Relation
INDG 4020 [0.5]	Practicum
INDG 4905 [0.5]	Directed Studies I
IPAF 4900 [0.5]	Research Experience Course
LAWS 3504 [0.5]	Law and Aboriginal Peoples
LAWS 4504 [0.5]	Indigenous Criminal Justice
PADM 4224 [0.5]	Aboriginal Policy
PAPM 4908 [1.0]	Honours Research Essay

PSCI 4206 [0.5]	Indigenous Politics of North America
SOWK 4102 [0.5]	Indigenous Peoples and Social Policy
B. Credits Not Included in the Major CGPA (10.0 credits)	
7. 1.0 credit in:	1.0
PSCI 2701 [0.5]	Introduction to Research Methods in Political Science
PSCI 2702 [0.5]	Quantitative Research Methods in Political Science
8. 1.0 credit in:	1.0
LAWS 2501 [0.5]	Law, State and Constitution
LAWS 2502 [0.5]	Law, State and Citizen
9. 1.5 credits in:	1.5
BUSI 3602 [0.5]	Designing Organizational Systems: An Overview
ECON 1001 [0.5]	Introduction to Microeconomics
ECON 1002 [0.5]	Introduction to Macroeconomics
10. 0.5 credit from:	0.5
PSCI 2002 [0.5]	Canadian Politics and Civil Society
PSCI 2101 [0.5]	Comparative Politics of the Global North
PSCI 2102 [0.5]	Comparative Politics of the Global South
11. 1.0 credit from:	1.0
HIST 1002 [1.0]	Europe in the 20th Century
HIST 1301 [0.5]	Conflict and Change in Early Canadian History
HIST 1302 [0.5]	Rethinking Modern Canadian History
HIST 1707 [1.0]	World History
HIST 2301 [0.5]	Canadian Political History
HIST 2311 [0.5]	Environmental History of Canada
12. 0.5 credit from:	0.5
INDG 1010 [0.5]	Introduction to Indigenous Peoplehood Studies
INDG 1011 [0.5]	Introduction to Indigenous-Settler Encounters
13. 4.5 credits in free electives	4.5
Total Credits	20.0

Regulations

In addition to the requirements listed here, students must satisfy the University regulations (see the *Academic Regulations of the University* section of this Calendar.) Students should consult the College when planning their program and selecting courses.

Graduation

Following are the minimum CGPA requirements for B.P.A.P.M. (Honours) graduation:

Overall CGPA: 6.50

Major CGPA: 6.50

Academic Continuation Evaluation for Bachelor of Public Affairs and Policy Management

Students in the B.P.A.P.M. (Honours) follow the standard Academic Continuation Evaluation (ACE) regulations governing Honours programs described in Section 3.2

of the *Academic Regulations of the University*, with the following additions and amendments:

1. Students are *Eligible to Continue* (EC) if they have an Overall CGPA of at least 6.50 and a Major CGPA of at least 6.50.
2. Students with less than 6.50 in either the Overall or Major CGPA, but who have an Overall CGPA of at least 1.00, will be placed on *Academic Warning* (AW). Students with an Overall CGPA of less than 1.00 will be *Dismissed from Program* (DP).
3. Students on *Academic Warning* (AW) who do not achieve a Term GPA of 6.50 as well as a minimum Term GPA of 6.50 in any courses taken within the Major will be required to withdraw from the program.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy

Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study. Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager
9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database.

Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

Bachelor of Public Affairs and Policy Management: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered as a full-time student in the B.P.A.P.M. (Honours) program;
2. Obtained an overall CGPA of 9.00 or higher calculated on at least 5.0 credits.

Students in the Bachelor of Public Affairs and Policy Management (Honours) must successfully complete three (3) work terms to obtain the co-op designation.

Work Term Course: PAPM 3999

Work/Study Pattern:

Public Policy and Administration, Human Rights, Development Studies, International Studies, Communication and IT Policy, Strategic Opinion and Policy Analysis, Social Policy

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	
Summer		Summer	W	Summer	W	Summer	S		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.P.A.P.M. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses.

Advanced Standing

Applications for admission with advanced standing to the program will be assessed on their merits. Normally, offers are made to students with an overall CGPA of 9.00 (B+) or higher. Students must also present at least one of the following: ECON 1001, ECON 1002, or a second-year Political Science course with a minimum grade of B.

Advanced standing will be granted only for those courses deemed appropriate to the program. Students will not receive credit for courses graded below C-.

Co-op Option

Direct Admission to the first year of the Co-op Option

Applicants must:

1. meet the required overall admission cut-off average and/or prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the B.P.A.P.M. (Honours) program;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements

for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Public Affairs and Policy Management (PAPM) Courses

PAPM 1001 [0.5 credit]

Policy: Analysis, Implementation, and Evaluation

The processes of policy-making, implementation and evaluation. Forces that shape policy deliberations and alternative tools for managing policy action and policy evaluation. Theoretical approaches to understanding the origins of policy, and methods by which programs are designed and assessed.

Includes: Experiential Learning Activity

Precludes additional credit for PAPM 2000.

Lecture two hours a week, discussion one hour per week.

PAPM 2001 [0.5 credit]

Foundations of Public Policy: Political Thought

Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in political philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.

Precludes additional credit for PAPM 1000.

Prerequisite(s): PAPM 1001, PSCI 2003, and second-year standing.

Lecture two hours a week, discussion one hour a week.

PAPM 2002 [0.5 credit]

Foundations of Public Policy: Economic Thought

Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in economic philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.

Precludes additional credit for PAPM 1000.

Prerequisite(s): PAPM 1001, PSCI 2003, and second-year standing.

Lecture two hours a week, discussion one hour a week.

PAPM 3000 [0.5 credit]

Policy Research

An examination of the research strategies and techniques relevant to policy analysis and evaluation. Using the case study method, the role of research and research organizations in the policy process is discussed. The issue of ethical dilemmas in policy research is also considered.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2701 and PSCI 2702, or COMM 2001, or ECON 2201 and ECON 2202 and Good Standing in the Bachelor of Public Affairs and Policy Management program.

Lecture and discussion three hours a week.

PAPM 3999 [0.0 credit]

Co-operative Work Term

Includes: Experiential Learning Activity

PAPM 4000 [0.5 credit]**Capstone Seminar in Public Affairs and Policy Management**

Policy workshop focusing on the application of public affairs analysis to develop problem solving and research skills. Seminar is policy-focused and organized by area of Specialization in the program. Students, working in small groups, examine concrete policy problems, actual or simulated, in specific institutional contexts.

Includes: Experiential Learning Activity

Prerequisite(s): PAPM 3000 and Good Standing in the Bachelor of Public Affairs and Policy Management program.

Seminar three hours a week.

PAPM 4099 [0.5 credit]**Policy Seminar**

Students address a specific policy problem or problems, in interaction with local, national or international policy experts or practitioners. Emphasis on policy analysis, research, and communication skills.

Includes: Experiential Learning Activity

Prerequisite(s): PAPM 3000.

Seminar three hours per week.

PAPM 4100 [0.5 credit]**Special Topics in Public Affairs and Policy Management**

Analysis of selected issues in public affairs and policy management not ordinarily treated in the regular course program. The choice of topics will vary from year to year. Students should consult with the College regarding the topic offered.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.P.A.P.M. program or permission of the Kroeger College.

Seminar three hours per week.

PAPM 4908 [1.0 credit]**Honours Research Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): PAPM 3000 and fourth-year standing in the Bachelor of Public Affairs and Policy Management program with a Major CGPA or 9.0 or better, or permission of the Director of the Public Affairs and Policy Management program.

Religion

This section presents the requirements for programs in:

- Religion B.A. Honours
- Religion B.A. Combined Honours
- Religion B.A.
- Specialization in Global Religions: Identity and Community B.G.In.S. Honours

- Stream in Global Religions: Identity and Community B.G.In.S.

- Minor in Religion

Program Requirements

Religion

B.A. Honours (20.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 1.0 credit in Foundations	1.0
RELI 1710 [0.5]	Judaism, Christianity, Islam
RELI 1712 [0.5]	Religions of South and East Asia
2. 0.5 credit from Traditions and Contexts: Judaism, Christianity, and Islam	0.5
RELI 2110 [0.5]	Judaism
RELI 2200 [0.5]	Christianity
RELI 2310 [0.5]	Islam
3. 0.5 credit from Traditions and Contexts: Hinduism, Buddhism, Religions of China	0.5
RELI 2410 [0.5]	Buddhism
RELI 2510 [0.5]	Hinduism
RELI 2600 [0.5]	Religions of China
4. 0.5 credit from Indigenous Traditions	0.5
RELI 2800 [0.5]	Indigenous Traditions
5. 1.0 credit from Comparative and Global Themes	1.0
RELI 1741 [0.5]	Global Religions: Identity and Community
RELI 2230 [0.5]	Global Christianity
RELI 2535 [0.5]	Religion and Gender
RELI 2711 [0.5]	Love and Its Myths
RELI 2712 [0.5]	Religious Diversity of Canada
RELI 2713 [0.5]	Mystical and Contemplative Traditions
RELI 2732 [0.5]	Death and Afterlife
RELI 2736 [0.5]	Religion and Society
RELI 2738 [0.5]	Philosophy of Religion
RELI 2810 [0.5]	Special Topics in Religion and Popular Culture
RELI 2811 [0.5]	Religions and the Environment
RELI 3000 [0.5]	Religion and Public Life
RELI 3101 [0.5]	Special Topics in Religions and the Body
RELI 3301 [0.5]	Music and Religion
RELI 3722 [0.5]	Religion and Violence
6. 1.5 credits in Disciplinary Core Courses	1.5
RELI 2741 [0.5]	Big Questions in Religious Studies
RELI 3741 [0.5]	Classical Approaches to Religion
RELI 4741 [0.5]	Contemporary Issues in the Study of Religion
7. 0.5 credit in RELI at the 2000 level or above (excluding RELI 2741)	0.5
8. 1.0 credit in RELI at the 3000 level (excluding RELI 3741)	1.0
9. 1.5 credits in RELI at the 4000 level (excluding RELI 4741)	1.5
B. Credits Not Included in the Major CGPA (12.0 credits)	
10. 8.0 credits in electives not in RELI	8.0
11. 4.0 credits in free electives (can be in RELI)	4.0
Total Credits	20.0

Religion

B.A. Combined Honours (20.0 credits)

A. Credits Included in the Religion Major CGPA (6.0 credits)

1. 1.0 credit in Foundations 1.0

RELI 1710 [0.5]	Judaism, Christianity, Islam
RELI 1712 [0.5]	Religions of South and East Asia

2. 0.5 credit from Traditions and Contexts: Judaism, Christianity, and Islam 0.5

RELI 2110 [0.5]	Judaism
RELI 2200 [0.5]	Christianity
RELI 2310 [0.5]	Islam

3. 0.5 credit from Traditions and Contexts: Hinduism, Buddhism, Religions of China 0.5

RELI 2410 [0.5]	Buddhism
RELI 2510 [0.5]	Hinduism
RELI 2600 [0.5]	Religions of China

4. 0.5 credit from Indigenous Traditions 0.5

RELI 2800 [0.5]	Indigenous Traditions
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5. 1.0 credit from Comparative and Global Themes 1.0

RELI 1741 [0.5]	Global Religions: Identity and Community
RELI 2230 [0.5]	Global Christianity
RELI 2535 [0.5]	Religion and Gender
RELI 2711 [0.5]	Love and Its Myths
RELI 2712 [0.5]	Religious Diversity of Canada
RELI 2713 [0.5]	Mystical and Contemplative Traditions

RELI 2732 [0.5]	Death and Afterlife
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RELI 2736 [0.5]	Religion and Society
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RELI 2738 [0.5]	Philosophy of Religion
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RELI 2810 [0.5]	Special Topics in Religion and Popular Culture
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RELI 2811 [0.5]	Religions and the Environment
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RELI 3000 [0.5]	Religion and Public Life
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RELI 3101 [0.5]	Special Topics in Religions and the Body
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RELI 3301 [0.5]	Music and Religion
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RELI 3722 [0.5]	Religion and Violence
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6. 1.5 credits in Disciplinary Core Courses 1.5

RELI 2741 [0.5]	Big Questions in Religious Studies
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RELI 3741 [0.5]	Classical Approaches to Religion
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RELI 4741 [0.5]	Contemporary Issues in the Study of Religion
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7. 1.0 credit in RELI at the 4000 level (excluding RELI 4741) 1.0

B. Additional Requirements (14.0 credits) 14.0

8. The requirements from the other discipline must be satisfied

9. Sufficient free electives to make 20.0 credits for the degree

Total Credits 20.0

Religion

B.A. (15.0 credits)

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit in Foundations 1.0

RELI 1710 [0.5]	Judaism, Christianity, Islam
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RELI 1712 [0.5]	Religions of South and East Asia
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2. 0.5 credit from Traditions and Contexts: Judaism, Christianity, and Islam 0.5

RELI 2110 [0.5]	Judaism
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RELI 2200 [0.5]	Christianity
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RELI 2310 [0.5]	Islam
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3. 0.5 credit from Traditions and Contexts: Hinduism, Buddhism, Religions of China 0.5

RELI 2410 [0.5]	Buddhism
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RELI 2510 [0.5]	Hinduism
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RELI 2600 [0.5]	Religions of China
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4. 0.5 credit from Indigenous Traditions 0.5

RELI 2800 [0.5]	Indigenous Traditions
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5. 1.5 credits from Comparative and Global Themes 1.5

RELI 2535 [0.5]	Religion and Gender
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RELI 2711 [0.5]	Love and Its Myths
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RELI 2712 [0.5]	Religious Diversity of Canada
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RELI 2713 [0.5]	Mystical and Contemplative Traditions
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RELI 2732 [0.5]	Death and Afterlife
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RELI 2736 [0.5]	Religion and Society
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RELI 2810 [0.5]	Special Topics in Religion and Popular Culture
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RELI 2811 [0.5]	Religions and the Environment
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RELI 3000 [0.5]	Religion and Public Life
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RELI 3101 [0.5]	Special Topics in Religions and the Body
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RELI 3722 [0.5]	Religion and Violence
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6. 1.0 credit in Disciplinary Core Courses 1.0

RELI 2741 [0.5]	Big Questions in Religious Studies
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RELI 3741 [0.5]	Classical Approaches to Religion
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7. 1.0 credit in RELI at the 2000-level or above 1.0

B. Credits Not Included in the Major CGPA (9.0 credits)

8. 6.0 credits not in RELI 6.0

9. 3.0 credits in free electives (can be in RELI) 3.0

Total Credits 15.0

Specialization in Global Religions: Identity and Community

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in Core Courses 4.5

GINS 1000 [0.5]	Global History
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GINS 1010 [0.5]	International Law and Politics
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GINS 1020 [0.5]	Ethnography, Globalization and Culture
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GINS 2000 [0.5]	Ethics and Globalization
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GINS 2010 [0.5]	Globalization and International Economic Issues
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GINS 2020 [0.5]	Global Literatures
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GINS 3010 [0.5]	Global and International Theory
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GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change
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GINS 4090 [0.5]	Honours Seminar in Global and International Studies
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2. 0.0 credit in:

GINS 1300 [0.0]	International Experience Requirement Preparation
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3. 7.5 credits in: the Specialization 7.5

a. 1.5 credits in Global Religious Studies Core

RELI 1741 [0.5]	Global Religions: Identity and Community
RELI 2741 [0.5]	Big Questions in Religious Studies
RELI 3741 [0.5]	Classical Approaches to Religion

b. 1.0 credit from Foundations in Judaism, Christianity, and Islam (no more than 0.5 credit at the 1000 level)

RELI 1710 [0.5]	Judaism, Christianity, Islam
RELI 2110 [0.5]	Judaism
RELI 2121 [0.5]	Hebrew Bible
RELI 2200 [0.5]	Christianity
RELI 2220 [0.5]	Early Christianity
RELI 2230 [0.5]	Global Christianity
RELI 2310 [0.5]	Islam
RELI 2330 [0.5]	The Qur'an
RELI 2350 [0.5]	Classical Islamic Thought
RELI 2355 [0.5]	Islamic Ethics
RELI 2735 [0.5]	Greek Religion
RELI 2737 [0.5]	Roman Religion

c. 1.0 credit from Foundations in Asian or Indigenous Religions (no more than 0.5 credit at the 1000 level)

RELI 1712 [0.5]	Religions of South and East Asia
RELI 2410 [0.5]	Buddhism
RELI 2510 [0.5]	Hinduism
RELI 2720 [0.5]	Indigenous Religions of Canada
RELI 2750 [0.5]	Sikhism
RELI 2800 [0.5]	Indigenous Traditions

d. 1.0 credit in Advanced Traditions and Contexts

RELI 3140 [0.5]	The Holocaust: Historical and Religious Dimensions
RELI 3220 [0.5]	Reformation Europe
RELI 3230 [0.5]	Jesus of Nazareth
RELI 3231 [0.5]	Paul of Tarsus
RELI 3232 [0.5]	Christian Discipline
RELI 3250 [0.5]	Evangelical Christianity in Social-Historical Perspective
RELI 3330 [0.5]	Sufism
RELI 3340 [0.5]	The Life and Image of Muhammad
RELI 3420 [0.5]	Early Buddhism
RELI 3422 [0.5]	Buddhism Beyond India
RELI 3520 [0.5]	Early Hinduism
RELI 3522 [0.5]	Modern Hinduism
RELI 3732 [0.5]	Studies in Greek Art
RELI 3733 [0.5]	Studies in Roman Art

e. 1.5 credits from Comparative and Global Religion (at least 0.5 credit at the third-year level)

RELI 2535 [0.5]	Religion and Gender
RELI 2711 [0.5]	Love and Its Myths
RELI 2712 [0.5]	Religious Diversity of Canada
RELI 2713 [0.5]	Mystical and Contemplative Traditions
RELI 2732 [0.5]	Death and Afterlife
RELI 2736 [0.5]	Religion and Society
RELI 2810 [0.5]	Special Topics in Religion and Popular Culture

RELI 2811 [0.5]	Religions and the Environment
RELI 2840 [0.5]	Topics in Religion
RELI 3000 [0.5]	Religion and Public Life
RELI 3101 [0.5]	Special Topics in Religions and the Body

RELI 3722 [0.5]	Religion and Violence
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RELI 3840 [0.5]	Topics in Religion
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RELI 3850 [0.5]	Topics in the Study of Religion Abroad
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f. 1.5 credits from Honours Seminars and Honours Research Essay:

RELI 4741 [0.5]	Contemporary Issues in the Study of Religion
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and

1.0 credit in RELI at the 4000 level

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in free electives 8.0

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits 20.0

Stream in Global Religions: Identity and Community

B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses 4.0

GINS 1000 [0.5]	Global History
GINS 1010 [0.5]	International Law and Politics
GINS 1020 [0.5]	Ethnography, Globalization and Culture
GINS 2000 [0.5]	Ethics and Globalization
GINS 2010 [0.5]	Globalization and International Economic Issues
GINS 2020 [0.5]	Global Literatures
GINS 3010 [0.5]	Global and International Theory
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change

2. 4.0 credits from: the Stream 4.0

a. Global Religious Studies Core

RELI 1741 [0.5]	Global Religions: Identity and Community
RELI 2741 [0.5]	Big Questions in Religious Studies
RELI 3741 [0.5]	Classical Approaches to Religion

b. Foundations in Judaism, Christianity, and Islam

RELI 1710 [0.5]	Judaism, Christianity, Islam
RELI 2110 [0.5]	Judaism
RELI 2121 [0.5]	Hebrew Bible
RELI 2200 [0.5]	Christianity
RELI 2220 [0.5]	Early Christianity
RELI 2230 [0.5]	Global Christianity
RELI 2310 [0.5]	Islam
RELI 2330 [0.5]	The Qur'an
RELI 2350 [0.5]	Classical Islamic Thought
RELI 2355 [0.5]	Islamic Ethics
RELI 2735 [0.5]	Greek Religion
RELI 2737 [0.5]	Roman Religion

c. Foundations in Asian or Indigenous Religions

RELI 1712 [0.5]	Religions of South and East Asia	
RELI 2410 [0.5]	Buddhism	
RELI 2510 [0.5]	Hinduism	
RELI 2515 [0.5]	Religion and Aesthetics in India	
RELI 2750 [0.5]	Sikhism	
RELI 2720 [0.5]	Indigenous Religions of Canada	
RELI 2800 [0.5]	Indigenous Traditions	
d. Advanced Traditions and Contexts		
RELI 3101 [0.5]	Special Topics in Religions and the Body	
RELI 3140 [0.5]	The Holocaust: Historical and Religious Dimensions	
RELI 3220 [0.5]	Reformation Europe	
RELI 3230 [0.5]	Jesus of Nazareth	
RELI 3231 [0.5]	Paul of Tarsus	
RELI 3232 [0.5]	Christian Discipline	
RELI 3250 [0.5]	Evangelical Christianity in Social-Historical Perspective	
RELI 3330 [0.5]	Sufism	
RELI 3340 [0.5]	The Life and Image of Muhammad	
RELI 3360 [0.5]	Special Topics in Islamic Texts & Narratives	
RELI 3420 [0.5]	Early Buddhism	
RELI 3422 [0.5]	Buddhism Beyond India	
RELI 3520 [0.5]	Early Hinduism	
RELI 3522 [0.5]	Modern Hinduism	
RELI 3732 [0.5]	Studies in Greek Art	
RELI 3733 [0.5]	Studies in Roman Art	
e. Comparative and Global Religion		
RELI 2535 [0.5]	Religion and Gender	
RELI 2711 [0.5]	Love and Its Myths	
RELI 2712 [0.5]	Religious Diversity of Canada	
RELI 2713 [0.5]	Mystical and Contemplative Traditions	
RELI 2732 [0.5]	Death and Afterlife	
RELI 2736 [0.5]	Religion and Society	
RELI 2738 [0.5]	Philosophy of Religion	
RELI 2840 [0.5]	Topics in Religion	
RELI 3722 [0.5]	Religion and Violence	
RELI 3840 [0.5]	Topics in Religion	
RELI 3850 [0.5]	Topics in the Study of Religion Abroad	
B. Credits Not Included in the Major CGPA (7.0 credits)		
3. 7.0 credits in free electives		7.0
C. Additional Requirements		
4. The Language requirement must be met.		
Total Credits		15.0

Minor in Religion (4.0 credits)

Open to all undergraduate degree students not in Religion programs.

Requirements

1. 1.0 credit in 1000-level RELI	1.0
2. 1.0 credit in 2000-level or higher RELI	1.0
3. 1.0 credit in 3000-level or higher RELI	1.0
4. 1.0 credit in RELI	1.0

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed

Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or

option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average

of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to

meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Religion (RELI) Courses

Language courses RELI 1010 [1.0] Elementary Language Tutorial, RELI 2010 [1.0] Intermediate Language Tutorial and RELI 3010 [1.0] Advanced Language Tutorial are intended for students specializing in a particular religious tradition. They are offered according to the availability of members of the Discipline. Courses taken at the 2000-level or above will be mainly independent study under the supervision of a member of the Discipline. Students interested in taking these courses should consult the Co-ordinator.

RELI 1010 [1.0 credit]

Elementary Language Tutorial

Elementary study of the language required for studying a religious tradition.

Precludes additional credit for RELI 1902 (no longer offered).

Prerequisite(s): Major/Minor in Religion or permission of the department.

Tutorial two hours a week.

RELI 1710 [0.5 credit]**Judaism, Christianity, Islam**

A survey of the history, beliefs and practices of these major religious traditions.

Includes: Experiential Learning Activity

Precludes additional credit for RELI 1000.

Lecture three hours a week.

RELI 1712 [0.5 credit]**Religions of South and East Asia**

A survey of the history, beliefs, and practices of South and East Asian religious traditions, including Hinduism, Buddhism, Jainism, Sikhism, Daoism, Confucianism, and Shinto.

Precludes additional credit for RELI 1715, RELI 1716.

Lecture three hours per week.

RELI 1731 [0.5 credit]**Varieties of Religious Experience**

The variety of religious experiences and their interpretations: myth, literature, art and religious doctrine. Topics include time, self, the other, journey and wisdom. Examples ranging from shamanistic experience to the abstractions of Buddhist philosophy.

Precludes additional credit for RELI 1205, RELI 1206, RELI 1402, and RELI 2002.

Prerequisite(s): restricted to students registered in the Bachelor of Humanities & Religion program.

Lecture three hours a week.

RELI 1741 [0.5 credit]**Global Religions: Identity and Community**

An introduction to major issues in the study of religion in global contexts, drawing on historical and contemporary examples.

Lecture three hours a week.

RELI 2010 [1.0 credit]**Intermediate Language Tutorial**

Intermediate study of the language required for studying a religious tradition. Restricted to students registered in a Religion program.

Precludes additional credit for RELI 2902 (no longer offered).

Prerequisite(s): RELI 1902 or RELI 1010 or permission of the department.

Tutorial two hours a week.

RELI 2110 [0.5 credit]**Judaism**

The history of Judaism and the Jewish people from the Second Temple until the present day. The organization, basic beliefs, social and ethical practices of the Jews and Judaism.

Precludes additional credit for RELI 1008 and RELI 2508.

Lecture three hours a week.

RELI 2121 [0.5 credit]**Hebrew Bible**

Introduces the Hebrew Bible within historical and religious frameworks. All texts are in English.

Precludes additional credit for RELI 3505C taught in 2007-2008.

Prerequisite(s): RELI 1710 or RELI 1000 or RELI 2110 or RELI 2508 or permission of the department.

Lecture three hours a week.

RELI 2200 [0.5 credit]**Christianity**

An introduction to the history, beliefs, traditions, practices, and diversity of Christianity from its beginnings to the present day.

Lecture three hours per week.

RELI 2220 [0.5 credit]**Early Christianity**

Introduction to the critical study of the writings of the New Testament with discussion of their Hellenistic and Jewish background, the historical Jesus, Paul and his letters, and historical and sociological explanations for the rise of the early church and interpretation of its writings.

Precludes additional credit for RELI 1003, RELI 1200 and RELI 2207.

Lecture three hours a week.

RELI 2230 [0.5 credit]**Global Christianity**

Survey of recent and current Christian movements around the world, both by region and thematically, with emphasis on institutions and networks that connect Christian communities across national boundaries.

Special consideration is given to the cultural and political capacities of such Christian communities and networks.

Lecture three hours a week.

RELI 2310 [0.5 credit]**Islam**

The study of Muslim religious tradition and investigation of its organization, basic beliefs, social and ethical principles and practices.

Precludes additional credit for RELI 1009 and RELI 2509.

Lecture three hours a week.

RELI 2330 [0.5 credit]**The Qur'an**

An examination of the Qur'an's content, form, style, central themes, canonization, and classical and contemporary interpretive traditions.

Prerequisite(s): second-year standing.

Lecture three hours a week.

RELI 2350 [0.5 credit]**Classical Islamic Thought**

A survey of the development of the central ideas and schools of Islamic theology and philosophy from the eighth century to the end of the seventeenth century CE.

Precludes additional credit for RELI 3320 or RELI 3321.

Lecture three hours a week.

RELI 2355 [0.5 credit]**Islamic Ethics**

A survey of Muslim ethical writings on the pursuit of virtue and the good life, human nature, individual agency, and moral responsibility.

Lecture three hours per week.

RELI 2410 [0.5 credit]**Buddhism**

Basic beliefs and practices of the Buddhist tradition and a brief survey of its development and transformations in India, Sri Lanka, Southeast Asia, Tibet, China and Japan. Precludes additional credit for RELI 1006 and RELI 2106. Lecture three hours a week.

RELI 2510 [0.5 credit]**Hinduism**

Basic beliefs, practices, and social structures of the Hindu tradition as reflected in Hindu scriptures, myths and symbols, and philosophical schools. Precludes additional credit for RELI 1005 and RELI 2005. Lecture three hours a week.

RELI 2515 [0.5 credit]**Religion and Aesthetics in India**

Myths and symbols of the Indian tradition expressed in Hindu and Buddhist art. Hindu theories of beauty and the interface of the arts with the spiritual traditions of India. Precludes additional credit for RELI 2005 (if taken before 2007-2008) and RELI 2008.

Prerequisite(s): second-year standing.

Lecture three hours a week.

RELI 2535 [0.5 credit]**Religion and Gender**

An exploration of women and religion in historical and contemporary contexts.

Lecture three hours a week.

RELI 2600 [0.5 credit]**Religions of China**

Survey of the origins, development, and diffusion of Chinese religious traditions, including Confucianism, Daoism, Chinese Buddhism and popular religion(s). Includes: Experiential Learning Activity

Lecture three hours a week.

RELI 2710 [1.0 credit]**Maccabees to Muhammad**

The early history, literature and ideas of Judaism, Christianity and Islam from 200 BCE to 750 CE. Precludes additional credit for RELI 2208.

Prerequisite(s): restricted to students in the Bachelor of Humanities & Religion program.

Lecture three hours per week.

RELI 2711 [0.5 credit]**Love and Its Myths**

Major devotional movements in Hinduism and Christianity, focusing on the love of the divine and philosophical accounts of these ideas over time.

Lecture three hours a week.

RELI 2712 [0.5 credit]**Religious Diversity of Canada**

An historical survey emphasizing the interactions of various religious traditions in Canada, including indigenous religions, Christian missionary and colonial traditions, immigrant and global diaspora religions. Precludes additional credit for RELI 2307 Section A (2007-2008).

Lectures three hours a week.

RELI 2713 [0.5 credit]**Mystical and Contemplative Traditions**

An historical and functional study of mystical experiences in their religious contexts, relying on examples from selected traditions such as the Christian, Buddhist, Hindu, Jewish and Muslim.

Precludes additional credit for RELI 2300.

Lecture three hours a week.

RELI 2720 [0.5 credit]**Indigenous Religions of Canada**

Religions of Inuit, First Nations and Métis peoples, past and present. Considerations include concepts of tradition, syncretism and "creative ritual." Primary sources may include textual, visual and oral materials. Course may include fieldwork, as well as in-class presentations by community elders.

Lecture three hours a week.

RELI 2732 [0.5 credit]**Death and Afterlife**

The meaning of death and afterlife in some religious traditions and secular philosophies with emphasis on the Hindu teaching of the immortal soul; the Hebraic idea of collective survival; the Christian doctrine of resurrection of the body; the Buddhist conception of no-soul and nirvana. Precludes additional credit for RELI 2308.

Lecture three hours a week.

RELI 2735 [0.5 credit]**Greek Religion**

A study of religion in ancient Greece.

Also listed as CLCV 2103.

Precludes additional credit for CLCV 2102, RELI 2734, RELI 2102.

Lecture three hours a week.

RELI 2736 [0.5 credit]**Religion and Society**

Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes.

Includes: Experiential Learning Activity

Also listed as ANTH 2550.

Lectures and workshop three hours a week.

RELI 2737 [0.5 credit]**Roman Religion**

A study of religion in ancient Rome.

Also listed as CLCV 2104.

Precludes additional credit for CLCV 2102 and RELI 2734 and RELI 2102.

Lecture three hours a week.

RELI 2738 [0.5 credit]**Philosophy of Religion**

A study of philosophical issues arising from religion. Topics may include: arguments for and against the existence of God, religious experience, death and the afterlife, miracles, God and evil, the relationship between religion and science, and the relationship between religion and ethics.

Also listed as PHIL 2601.

Prerequisite(s): a course in philosophy or second-year standing.

Lecture three hours a week.

RELI 2741 [0.5 credit]**Big Questions in Religious Studies**

In this Inquiry course, students will be introduced to a specific topic in Religious Studies (e.g., ritual, narrative, space) and develop a research project related to it. Focus on fostering intellectual curiosity and developing practical skills of reading, writing and research fundamentals.

Precludes additional credit for RELI 2002 (no longer offered), RELI 1205 (no longer offered), RELI 1402 (no longer offered), and RELI 1730 (no longer offered).

Seminar three hours per week.

RELI 2750 [0.5 credit]**Sikhism**

An examination of the basic beliefs, practices, and social structures of the Sikh tradition as reflected in Sikh scriptures, history and philosophical schools.

Lecture three hours a week

RELI 2800 [0.5 credit]**Indigenous Traditions**

This course illuminates a recent category of "World Religions" by examining cases from all five continents, as well as in diaspora (e.g., Brazilian Candomblé, Roma/Sinti religion). Considerations include the study of minority religions, religion in oral cultures, myth & ritual studies, colonialism, globalization.

Precludes additional credit for RELI 1720 (no longer offered).

Lecture three hours per week.

RELI 2810 [0.5 credit]**Special Topics in Religion and Popular Culture**

Examination of interactions between religion and popular culture in the form of music, film, video games, literature, and other media. Topic and focus will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.

Includes: Experiential Learning Activity

Lecture three hours per week.

RELI 2811 [0.5 credit]**Religions and the Environment**

Attitudes in the major world religions to nature and the environment and recent responses by religious traditions to ecological degradation and crisis. Includes examination of religious sensibilities expressed in environmentalism.

Precludes additional credit for RELI 3710.

Lecture three hours per week.

RELI 2840 [0.5 credit]**Topics in Religion**

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Precludes additional credit for repeated topics.

Lecture three hours a week.

RELI 3000 [0.5 credit]**Religion and Public Life**

This course examines some aspects of the intersection between religion(s) and public life, broadly construed, including social, economic, political, institutional aspects, either in the contemporary world or focused on a particular historical period.

Seminar three hours per week.

RELI 3010 [1.0 credit]**Advanced Language Tutorial**

Advanced study of the language required for studying a religious tradition.

Precludes additional credit for RELI 3902 (no longer offered).

Prerequisite(s): RELI 2902 (no longer offered) or

RELI 2010 or permission of the department.

Tutorial two hours a week.

RELI 3101 [0.5 credit]**Special Topics in Religions and the Body**

Discussion of the embodiment of religious ideas in life, law, and practice, for example in food consumption, gender ideologies, sexuality, adornment, and death rituals. Topic will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.

Precludes additional credit for RELI 3130 (no longer offered), RELI 3131 (no longer offered), RELI 3331 (no longer offered), RELI 3734 (no longer offered).

Lecture three hours a week.

RELI 3140 [0.5 credit]**The Holocaust: Historical and Religious Dimensions**

Introduction to the historical and religious dimensions of the Holocaust. The foundations, perpetration and consequences of the Nazi Final Solution through primary sources including survivor testimony will be examined.

Also listed as HIST 3714.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

RELI 3220 [0.5 credit]**Reformation Europe**

A history of the Protestant and Catholic Reformations of the sixteenth century, with emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era.

Also listed as HIST 3708.

Precludes additional credit for RELI 3708 (no longer offered).

Prerequisite(s): 0.5 credit at the 2000-level in HIST or third-year standing.

Lecture three hours a week.

RELI 3225 [0.5 credit]**Christianity 300-1500**

This course examines the development of Christian practices and teachings from late antiquity to early modernity, with a special emphasis on their historical diversity and the complex dynamics of church formation. Students should expect to read (in English) both primary and secondary sources.

Precludes additional credit for RELI 2210 (no longer offered), RELI 2225 (no longer offered).

Lecture three hours a week.

RELI 3226 [0.5 credit]**Christianity 1500-1900**

Developments in Christian practices and teachings over the early modern and modern periods, especially in relation to social changes commonly associated with modernity including: urbanization, state formation, industrialization, colonization, the development of capitalist economies.

Precludes additional credit for RELI 2210 (no longer offered), RELI 2226 (no longer offered).

Lecture three hours a week.

RELI 3230 [0.5 credit]**Jesus of Nazareth**

A study of the historical records of the life of Jesus, the methods used to interpret them, and the resulting images of Jesus.

Precludes additional credit for RELI 2205, RELI 3208 and RELI 3105.

Prerequisite(s): RELI 2207 or RELI 2220 or permission of the department.

Lectures three hours a week.

RELI 3231 [0.5 credit]**Paul of Tarsus**

The social, religious, and historical context of Paul, the communities he founded, and the letters he wrote to them.

Precludes additional credit for RELI 3300 and RELI 3106.

Prerequisite(s): RELI 2207 or RELI 2220 or permission of the department.

Lecture three hours a week.

RELI 3232 [0.5 credit]**Christian Discipline**

An historical survey of key Christian thought and practices at the individual and collective level. Topics may include self-discipline, body discipline, monastic discipline, church discipline and social discipline.

Precludes additional credit for RELI 3302 Section "A" taught in 2007-2008.

Prerequisite(s): third-year standing or permission of the department.

RELI 3250 [0.5 credit]**Evangelical Christianity in Social-Historical Perspective**

The development of some protestant Christianities in relation to material factors, such as colonialism, industrial or consumer capitalism, imperialism, and in relation to major ideological trends, such as nationalism, economic or political liberalism and atheism.

Lecture three hours a week.

RELI 3301 [0.5 credit]**Music and Religion**

An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people's worldviews, identities, and experiences within and outside of their communities.

Also listed as MUSI 3301.

Prerequisite(s): second-year standing.

Seminars three hours a week.

RELI 3330 [0.5 credit]**Sufism**

An introduction to the main practical and theoretical dimensions of Islam's mystical tradition as seen through the life and work of its key representatives.

Prerequisite(s): RELI 2710 or RELI 2713 or permission of the department.

Lecture three hours a week.

RELI 3340 [0.5 credit]**The Life and Image of Muhammad**

Overview of the life and teaching of the Prophet Muhammad, and the most salient motifs and features of Muslim devotion to him.

Precludes additional credit for RELI 2340.

Prerequisite(s): RELI 1710 or RELI 2310 or permission of the department.

Lecture three hours a week.

RELI 3360 [0.5 credit]**Special Topics in Islamic Texts & Narratives**

A focus on post-Qur'anic Islamic literature and interpretive traditions (e.g. tafsir, hadith); texts and topics will vary from year to year; please check departmental website for information. May be repeated for credit when the topic changes.

Prerequisite(s): RELI 2310 or RELI 2330.

Lecture three hours per week.

RELI 3420 [0.5 credit]**Early Buddhism**

The development of early Buddhist philosophy, psychology and practice with emphasis on the Pali Canon and its commentators.

Precludes additional credit for RELI 3215.

Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.

Lecture three hours a week.

RELI 3422 [0.5 credit]**Buddhism Beyond India**

The rise of the Mahayana and the dissemination and development of Buddhist thought and practice outside of India.

Precludes additional credit for RELI 3217.

Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.

Lecture three hours a week.

RELI 3520 [0.5 credit]**Early Hinduism**

A historical survey of Hinduism from the Vedic era to the development of devotional Hinduism. Vedic religion and developments in early Hindu Philosophy and sectarian Hinduism.

Precludes additional credit for RELI 3015.

Lecture three hours a week.

RELI 3522 [0.5 credit]**Modern Hinduism**

A survey of major developments in Hinduism since the period of colonial British rule. The development of "reform" Hinduism in the 18th and 19th centuries, and the emergence of Hindu nationalist movements in the 20th century.

Precludes additional credit for RELI 3007.

Lecture three hours a week.

RELI 3722 [0.5 credit]**Religion and Violence**

A thematic course that examines putative cases of "religion and violence" from a range of world traditions, but also interrogates aspects of the "religion and violence" rubric itself.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

RELI 3732 [0.5 credit]**Studies in Greek Art**

A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year.

Also listed as ARTH 3102, CLCV 3306.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

RELI 3733 [0.5 credit]**Studies in Roman Art**

A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year. Also listed as ARTH 3105, CLCV 3307.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

RELI 3741 [0.5 credit]**Classical Approaches to Religion**

Examination of reflection on the nature and origin of religion from the ancient world up to key figures and founders of the discipline of the systematic, critical, and scientific study of religion in the nineteenth and early twentieth century.

Prerequisite(s): second-year standing.

Lecture three hours per week.

RELI 3840 [0.5 credit]**Topics in Religion**

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Precludes additional credit for repeated topics.

Lecture three hours a week.

RELI 3850 [0.5 credit]**Topics in the Study of Religion Abroad**

This travel course explores religion in its historical and/or contemporary contexts in a particular geographic locale. Travel destinations, religious traditions studied, course content, and themes vary from year to year.

Prerequisite(s): third year standing and 1.0 credit of study in the area related to the year's topic religion, and permission of the department. Permission of the department is required to repeat this course.

Hours to be arranged. Costs associated with the course are borne by the student.

RELI 4602 [0.5 credit]**Is Religious Freedom a Human Right?**

Legal, theoretical, and theological interconnections between religion and human rights. Evaluation of concepts including religious freedom, secularism, public sphere, accommodation and neutrality. Examination of religion and culture, interdependence of legal and religious perspectives, boundaries of religion and state, and religious compulsion. Use of case studie.

Also listed as HUMR 4602, RELI 4602.

Prerequisite(s): LAWS 2908, LAWS 3602, and fourth-year Honours standing.

Seminar

RELI 4741 [0.5 credit]**Contemporary Issues in the Study of Religion**

This course engages with the real world implications of late twentieth and twenty-first century scholarship on religion with a focus on applied learning and developing employable skills that facilitate transition from academia to a career.

Includes: Experiential Learning Activity

Precludes additional credit for RELI 3301, RELI 4301, RELI 4740 (no longer offered).

Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department. Seminar three hours per week.

RELI 4840 [0.5 credit]**Tutorial**

A tutorial on a topic in religious studies. Contents of the tutorial to be arranged with the supervising faculty member.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.

RELI 4850 [0.5 credit]**Seminar in the Study of Religion**

Content of this course may vary from year to year. Please consult the departmental website for information on the topic.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department. Also offered at the graduate level, with different requirements, as RELI 5850, for which additional credit is precluded.

Seminar three hours a week.

RELI 4990 [1.0 credit]**Honours Research Essay**

Honours research paper (approx. 40 pages) is due on the last day of winter term classes. Written proposal due to the Proposal Board on the first day of fall term classes. Please consult department document for full requirements and information.

Includes: Experiential Learning Activity

Precludes additional credit for RELI 4908 and RELI 4909. Prerequisite(s): 10.0 CGPA and fourth-year standing in the Honours B.A. Religion program, or permission of the department.

Russian (Minor)

This section presents the requirements for programs in:

- Minor in Russian

Minor in Russian (4.0 credits)

Open to all undergraduate degree students.

Requirements:

1. 3.0 credits in RUSS	3.0
2. 1.0 credit in RUSS at the 3000-level or higher	1.0

3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language.

4. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits

4.0

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Russian (RUSS) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

RUSS 1010 [0.5 credit]**First-Year Russian I**

For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for RUSS 1110. Four hours a week.

RUSS 1020 [0.5 credit]**First-Year Russian II**

Continuation of first-year Russian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for RUSS 1110.

Prerequisite(s): grade of C or higher in RUSS 1010, or permission of the School.

Four hours a week.

RUSS 1110 [1.0 credit]**Intensive First-Year Russian**

For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for RUSS 1010 and RUSS 1020.

Eight hours a week (one term).

RUSS 2010 [0.5 credit]**Second-Year Russian I**

Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Prerequisite(s): grade of C or higher in RUSS 1020 or RUSS 1110, or permission of the School.

Four hours a week.

RUSS 2020 [0.5 credit]**Second-Year Russian II**

Continuation of second-year Russian. Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Prerequisite(s): grade of C or higher in RUSS 2010, or permission of the School.

Four hours a week.

RUSS 3010 [0.5 credit]**Third-Year Russian I**

Further study of Russian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in RUSS 2020, or permission of the School.

Three hours a week.

RUSS 3015 [0.5 credit]**Russian for Heritage Speakers I**

For students who have attained Russian language proficiency in informal settings or who completed elementary school in a Russian speaking country.

The course builds literacy skills, formalizes grammar awareness, and develops writing and reading language skills in a formal academic setting.

Precludes additional credit for all 1000 through 3000 level Russian courses.

Prerequisite(s): Permission of the School.
Online.

RUSS 3020 [0.5 credit]**Third-Year Russian II**

Continuation of third-year Russian. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in RUSS 3010, or permission of the School.

Three hours a week.

RUSS 3025 [0.5 credit]**Russian for Heritage Speakers II**

Further study of Russian to enhance students' literacy skills and formalize grammar awareness in a formal academic setting. Emphasis on the use of formal and academic language in oral and written form; further development of writing and reading skills.

Precludes additional credit for all 1000 through 3000 level Russian courses.

Prerequisite(s): RUSS 3015 or permission of the School.
Online.

RUSS 4010 [0.5 credit]**Fourth-Year Russian I**

Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study.

Compulsory attendance.

Prerequisite(s): grade of C or higher in RUSS 3020, or permission of the School.

Three hours a week.

RUSS 4020 [0.5 credit]**Fourth-Year Russian II**

Continuation of fourth-year Russian. Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Prerequisite(s): grade of C or higher in RUSS 4010, or permission of the School.

Three hours a week.

RUSS 4115 [0.5 credit]**Russian for Social Studies**

Russian language skills for translation of modern history and social science texts from Russian into English, with an emphasis on syntax. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for Russian translation offered under EURL 4901.

Prerequisite(s): permission of the School. Not open to students with native-like Russian proficiency.

Three hours a week.

RUSS 4120 [0.5 credit]

Russian for Research

Russian language skills for conducting research in modern history and social sciences, with an emphasis on practice and theory of translation from Russian into English.

Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for Russian translation offered under EURR 4902.

Prerequisite(s): grade of C in RUSS 4115, or permission of the School. Not open to students with native-like Russian proficiency.

Three hours a week.

RUSS 4900 [1.0 credit]

Independent Study

Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020 or equivalent, or permission of the School.

RUSS 4901 [0.5 credit]

Independent Study

Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020, or equivalent, or permission of the School.

Sexuality Studies (Minor)

This section presents the requirements for programs in:

- Minor in Sexuality Studies

Program Requirements

Minor in Sexuality Studies (4.0 credits)

This minor is available to all undergraduate degree students.

Requirements

1. 1.0 credit from:	1.0
FYSM 1402 [1.0] Issues in Women's and Gender Studies	
WGST 1808 [1.0] Introduction to Feminist Social Transformation	
2. 0.5 credit in:	0.5
SXST 2101 [0.5] Sexuality Studies: A Critical Introduction	
3. 1.0 credits in SXST or Approved Sexuality Studies Electives at the 2000-level or higher.	1.0
4. 1.5 credits in SXST or Approved Sexuality Studies Electives at the 3000-level or higher.	1.5
5. The remaining requirements of the major discipline(s) and degree must be satisfied	
Total Credits	4.0

Notes:

1. Other courses may be substituted for the credits specified in items three and four, when material on sexuality is central to the course. Such substitutions must be individually approved by the Pauline Jewett Institute of Women's and Gender Studies. Students are encouraged to consult course descriptions of Special Topics courses.

Approved Sexuality Studies Electives

Note: access to these courses is not guaranteed, and may depend on space availability and the satisfaction of other requirements such as course prerequisites.

Anthropology

ANTH 2040 [0.5]	Anthropology and Gender
ANTH 2670 [0.5]	Ethnography of Brazil
ANTH 4780 [0.5]	Anthropology of Personhood

Art History

ARTH 3600 [0.5]	Art Since 1945
ARTH 4600 [0.5]	Art, Architecture, and Gender

Canadian Studies

CDNS 3400 [0.5]	Feminist and Queer Canadas
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Communication and Media Studies

COMS 4604 [0.5]	Media, Gender and Sexuality
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Critical Race Studies

CRST 2001 [0.5]	Introduction to Critical Race Studies
CRST 3812 [0.5]	Interdisciplinary Topics in Critical Race Studies
CRST 4001 [0.5]	Advanced Critical Race Studies

Disability Studies

DBST 2001 [0.5]	Disabling Society
DBST 3001 [0.5]	Disability Studies: Policy and Activism
DBST 3002 [0.5]	Critical Mad Studies
DBST 3060 [0.5]	Critical Disability Studies
DBST 3304 [0.5]	Disability and Childhood: Transnational Perspectives
DBST 3812 [0.5]	Interdisciplinary Topics in Disability Studies
DBST 4812 [0.5]	Interdisciplinary Topics in Disability Studies

English Language and Literature

ENGL 2109 [0.5]	Gender, Sexuality and Literature
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Film Studies

FILM 3301 [0.5]	Topics in Cinema, Gender, and Sexuality
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History

HIST 3106 [0.5]	Social History of Sexuality
HIST 3115 [0.5]	Childhood and Youth in History
HIST 3120 [0.5]	History of the Body
HIST 3406 [0.5]	African-American Women
HIST 3505 [0.5]	Women in Canada
HIST 3604 [0.5]	Gender and Sexuality in Modern Europe
HIST 3717 [0.5]	Gender and Sexuality in Africa
HIST 4505 [1.0]	Seminar in Women's and Gender History

Human Rights

HUMR 1001 [1.0]	Introduction to Human Rights
HUMR 2301 [0.5]	Human Rights and Sexualities
HUMR 4302 [0.5]	Transgender Human Rights

Law

LAWS 3001 [0.5]	Women and the Legal Process
LAWS 3503 [0.5]	Equality and Discrimination
LAWS 3804 [0.5]	Law of the Family
LAWS 4001 [0.5]	Law, Family and Gender
LAWS 4002 [0.5]	Feminist Theories of Law
LAWS 5302 [0.5]	Feminism, Law and Social Transformation
LAWS 5008/ SOCI 5204 [0.5]	Consuming Passions: The Regulation of Consumption, Appearance and Sexuality

Music

MUSI 3302 [0.5]	Music and Gender I
MUSI 4303 [0.5]	Music and Gender II

Philosophy

PHIL 1500 [1.0]	Contemporary Moral, Social and Religious Issues
PHIL 2306 [0.5]	Philosophy and Feminism

Political Science

PSCI 2500 [0.5]	Gender and Politics
PSCI 3109 [0.5]	The Politics of Law and Morality
PSCI 3303 [0.5]	Feminist Political Theory
PSCI 3502 [0.5]	Gender and Politics: Global South
PSCI 4500 [0.5]	Gender and Globalization
PSCI 4501 [0.5]	Politics of Identity in Europe and the Russian Area
PSCI 4605 [0.5]	Gender in International Relations

Psychology

PSYC 3603 [0.5]	Psychology of Women
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Social Work

SOWK 3804 [0.5]	Law of the Family
SOWK 4206 [0.5]	Feminist Counselling

Sociology

SOCI 2043 [0.5]	Sociology of the Family
SOCI 2045 [0.5]	Gender and Society
SOCI 3040 [0.5]	Studies in the Sociology of Gender
SOCI 3044 [0.5]	Sociology of Sex and Sexuality
SOCI 3050 [0.5]	Studies in the Sociology of Health
SOCI 3420 [0.5]	Studies in Gender and Criminal Justice
SOCI 4040 [0.5]	Feminist Sociology of Intersectionality
SOCI 4043 [0.5]	Families in the 21st Century

Women's and Gender Studies

WGST 2801 [0.5]	Activism, Feminisms, and Social Justice
WGST 2803 [0.5]	Body Matters: The Politics of Bodies
WGST 2810 [0.5]	Sex For Sale
WGST 2811 [0.5]	Masculinities
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 2814 [0.5]	Gender, Sexuality and Cultural Production

WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3806 [0.5]	Girlhoods
WGST 3807 [0.5]	Gendered Violence
WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies

WGST 4060 [0.5]	African Feminisms
WGST 4812 [0.5]	Selected Topics in Women's and Gender Studies

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Sexuality Studies (SXST) Courses

SXST 2101 [0.5 credit]

Sexuality Studies: A Critical Introduction

While sexuality is often considered the most private and 'natural' of personal concerns, it is saturated with issues of social power, historical change, and public politics. This course offers a critical introduction to interdisciplinary studies of sexuality, focusing on history, theory, and cultural practice.

Includes: Experiential Learning Activity

Precludes additional credit for DIST 2101 (no longer offered).

Prerequisite(s): second-year standing or permission of the Institute.

Lectures and discussion groups three hours a week.

SXST 2102 [0.5 credit]

Sexuality, Gender, and Security

Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how 'subversives' were created through discourse and administrative logics such as policy and law.

Includes: Experiential Learning Activity

Also listed as HUMR 2102.

Prerequisite(s): second year standing.

Lectures and discussions three hours a week.

SXST 3103 [0.5 credit]

Sexuality and Disability

Exploration of ways that embodied categories of sex and gender, as well as desire are mediated through mainstream and alternative discourses of disability. Topics may include: crip theory, mental health issues, and LGBTQ sexualities.

Prerequisite(s): third-year standing or permission of the Institute.

Lecture three hours a week.

SXST 3104 [0.5 credit]**Transnational Sexualities**

Students analyze sex, gender and sexuality as power relations within, and between nation-states comprising the Global North and South, as well as new knowledge created through national border crossings. Topics may include: Orientalism, colonialization, and diasporic identities.

Prerequisite(s): third-year standing and SXST 2101.

Lecture three hours a week.

SXST 3106 [0.5 credit]**Queer(ing) Archives**

Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives.

Also listed as HIST 3102.

Prerequisite(s): third-year standing.

Seminar three hours a week.

SXST 3812 [0.5 credit]**Interdisciplinary Topics in Sexuality Studies**

An interdisciplinary analysis of one or more topics in sexuality studies. The topics of this course will vary year to year and are announced in advance of registration.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing and SXST 2102

OR permission of the Institute of Women's and Gender Studies.

Lecture three hours per week. This course is repeatable as long as each topic is different.

SXST 4101 [0.5 credit]**Interdisciplinary Studies of Sexuality**

A study of selected issues in sexuality studies considered from an interdisciplinary perspective. The course may focus on any one, or combination of, sexuality studies in relation to history, theory, and/or cultural practice.

Includes: Experiential Learning Activity

Precludes additional credit for DIST 4101 (no longer offered).

Prerequisite(s): SXST 2101 and fourth-year standing.

Seminar three hours a week.

SXST 4102 [0.5 credit]**Queer Theory**

A critical approach to gender and sexuality by engaging in key debates and texts in the field of queer theory and studies.

Prerequisite(s): SXST 2101 and fourth-year standing.

Also offered at the graduate level, with different requirements, as WGST 5102, for which additional credit is precluded.

Seminar three hours a week.

SXST 4103 [0.5 credit]**Politics of Kink**

This seminar analyzes critically the existence and regulation of non-normative sexual attitudes, behaviours and practices. Topics may include: non-monogamy, sadomasochism, pornography.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SXST 4104 [0.5 credit]**Sexuality and Political Economy**

An interdisciplinary and intersectional approach to issues in the area of Sexuality Studies focusing on socio-economic relations (e.g. class location, consumption) and the ways they mediate sex, gender, and sexual subject formation and governance. SXST 4101.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing.

Seminar three hours a week.

SXST 4105 [0.5 credit]**Queer Ecologies**

Students engage with debates within sexuality studies and transgender studies regarding the interwoven relationships between gender, race, indigeneity, desire, bodies and ecological politics. Topics may include: climate change, gendered and sexualized landscapes, and speciesism.

Prerequisite(s): fourth-year standing or by permission of the department.

Seminar three hours a week.

SXST 4106 [0.5 credit]**Queer Aesthetics: Affect, Cultural Production, Sexuality**

Critical examination of affective economies made in and through LGBTQ cultural production. Drawing from feminist, queer, trans and queer of colour critique, students will consider how queer affect, sentiment and emotions uniquely circulate in art and aesthetic objects.

Prerequisite(s): fourth-year standing or permission of the Institute.

Seminar three hours a week.

Social Work

This section presents the requirements for programs in:

- Bachelor of Social Work B.S.W. Honours

Senate Policy on Social Work Professional Suitability

Students in the Bachelor of Social Work (Honours) are expected to conform to the Canadian Association of Social Workers (CASW) Code of Ethics and the Ontario College of Social Workers and Social Service Workers (OCSWSSW) Code of Ethics and Standards of Practice. Students who violate these codes of ethics may be required, in accordance with the Senate Policy on Social Work Professional Suitability, to withdraw from the program with either the status *Continue in Alternate* (CA) or the status *Dismissed from Program* (DP).

Program Requirements

Bachelor of Social Work

B.S.W. Honours (20.0 credits)

A. Credits Included in the Major CGPA (10.5 credits)

1. 4.5 credits in: 4.5

SOWK 1001 [0.5]	Introduction to Social Welfare
SOWK 1002 [0.5]	Introduction to Social Work
SOWK 2001 [0.5]	Structural Analysis and Social Work
SOWK 2005 [0.5]	Values and Ethics for Social Work
SOWK 2100 [0.5]	The Political Economy of the Social Welfare State

SOWK 2202 [0.5]	Introduction to Social Work Practice with Individuals and Families
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SOWK 2203 [0.5]	Introduction to Social Work Practice with Groups and Communities
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SOWK 3100 [0.5]	Social Policy and Administration
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SOWK 4000 [0.5]	Social Work and Indigenous Peoples
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2. 1.0 credit in: 1.0

SOWK 3001 [0.5]	Introduction to Research Methods in Social Work
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SOWK 3002 [0.5]	Introduction to Statistical Analysis in Social Work
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3. 2.0 credits from: 2.0

SOWK 3600 [2.0]	Practicum I (Fall and Winter)
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SOWK 3601 [2.0]	Practicum I (Winter Term)
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SOWK 3602 [2.0]	Practicum I (Fall term)
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4. 0.5 credit from: 0.5

SOWK 4001 [0.5]	Advanced Social Work Practice with Individuals and Families
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SOWK 4002 [0.5]	Advanced Social Work Practice with Groups
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SOWK 4003 [0.5]	Advanced Social Work Practice with Communities
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SOWK 4004 [0.5]	Social Policy Development and Practice
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5. 0.5 credit from: 0.5

SOWK 4300 [0.5]	Social Work and Persons with Disabilities
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SOWK 4301 [0.5]	Racialization and Social Work
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SOWK 4302 [0.5]	Poverty and Social Welfare Policy
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SOWK 4303 [0.5]	Gender and Sexuality
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6. 2.0 credits from: 2.0

SOWK 4600 [2.0]	Practicum II (Fall or Summer Terms)
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SOWK 4601 [1.0]	Practicum IIA
& SOWK 4602 [1.0]	Practicum IIB

B. Credits Not Included in the Major CGPA (9.5 credits)

7. 2.0 credits in ANTH, CRCJ, ECON, HIST, HUMR, INDG, LAWS, PAMP, PSCI, PSYC, SOCI, or WGST 2.0

8. 6.0 credits not in SOWK 6.0

9. 1.5 credits in: 1.5

Free electives, or

or

SOWK 4908 [1.0]	Honours Essay
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and 0.5 credit in free electives.

Total Credits 20.0

Work Experience and Credit for Practicum I (SOWK 3600, SOWK 3601, SOWK 3602)

On admission to the B.S.W. (Honours) program, students who have four or more years of human service work experience may apply to the B.S.W. Field Coordinator for waiver of the 2.0 credit requirement for SOWK 3600 [2.0], SOWK 3601 [2.0] or SOWK 3602 [2.0].

If successful, they will be granted 1.0 elective credit in Social Work and will be required to take 1.0 additional elective credit in Social Work in lieu of SOWK 3600 [2.0], SOWK 3601 [2.0] or SOWK 3602 [2.0]. Full documentation of work experience and references are required.

Applications must be received by September 1 of each year.

Regulations

In addition to the program requirements described here, students in the Bachelor of Social Work (Honours) must satisfy the University regulations, including:

- the graduation requirements for Honours programs, as described in Section 3.4.6 of the *Academic Regulations of the University*.

Students should consult with the School of Social Work when planning their programs and selecting courses.

Senate Policy on Social Work Professional Suitability

Students in the Bachelor of Social Work (Honours) are expected to conform to the Canadian Association of Social Workers (CASW) Code of Ethics and the Ontario College of Social Workers and Social Service Workers (OCSWSSW) Code of Ethics and Standards of Practice. Students who violate these codes of ethics may be required, in accordance with the Senate Policy on Social Work Professional Suitability, to withdraw from the program with either the status *Continue in Alternate (CA)* or the status *Dismissed from Program (DP)*.

Academic Continuation Evaluation for Bachelor of Social Work (Honours)

Students in the B.S.W. (Honours) follow the continuation requirements for Honours programs, as described in Section 3.2.6 of the *Academic Regulations of the University*, with the following addition:

- Students with 15.5 or more program credits completed, but who have a Major CGPA less than 6.00, will be required to leave the B.S.W. program with the decision *Required to Withdraw for Two Terms (WT)*.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or

supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Degree

- B.S.W. (Honours)

Admission Requirements

First Year

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. Although it is not an admission requirement, a 4U course in English is strongly recommended.

Preference will be given to applicants with human service work experience, which may be met by employment and/or volunteer experience. Applicants will be asked to complete a supplementary application that will assist in the evaluation of their suitability for the program. Detailed information about the supplementary application can be found at admissions.carleton.ca.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be *Eligible to Continue* (EC) in their year level, and will be considered for transfer into the B.S.W. program when spaces are available. Students who have completed an undergraduate degree are normally admitted into the program with third-year standing. Applicants will be asked to complete a supplementary application that will assist in the evaluation of their suitability for the program. Detailed

information about the supplementary application can be found at admissions.carleton.ca.

Community College Applicants

Pathway agreements between the School of Social Work at Carleton University and several community colleges have been negotiated to facilitate the application of their graduates in their human or social service worker programs to Carleton's Bachelor of Social Work degree. Detailed information about these agreements can be found on the Admissions website: admissions.carleton.ca.

Social Work (SOWK) Courses

SOWK 1001 [0.5 credit]

Introduction to Social Welfare

Explores definitions of social welfare and the structure of the Canadian welfare state; evolution and devolution of the welfare state in Canada; social welfare and its relationship to social work, social change, and social justice.

Precludes additional credit for SOWK 1000 (no longer offered).

Lecture three hours a week.

SOWK 1002 [0.5 credit]

Introduction to Social Work

Introduction to the profession of social work; evolution of the social work profession in Canada; social work knowledge, values and skills. Explores professional and regulatory social work bodies and international linkages.

Precludes additional credit for SOWK 1000 (no longer offered).

Lectures three hours a week.

SOWK 2001 [0.5 credit]

Structural Analysis and Social Work

Evolution of structural social work, theories and critiques of structural social work and contemporary issues and challenges.

Precludes additional credit for SOWK 2000 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

SOWK 2005 [0.5 credit]

Values and Ethics for Social Work

Focuses on knowledge and skills for ethical decision-making in social work; understanding social work values and ethics, accountability and the professional use of self. Includes: Experiential Learning Activity

Precludes additional credit for SOWK 2000 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

SOWK 2100 [0.5 credit]**The Political Economy of the Social Welfare State**

Political economic theories as lenses for structural analysis of social problems and policies affecting social work practice in Canada.

Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.

Lecture three hours a week.

SOWK 2202 [0.5 credit]**Introduction to Social Work Practice with Individuals and Families**

Understand and develop skills required for working with individuals and families; active listening; use of self; engagement; rapport-building; interviewing and interventions; empathy; interpersonal and professional collaboration; supervision.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3201 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

SOWK 2203 [0.5 credit]**Introduction to Social Work Practice with Groups and Communities**

Introduces students to theory and practice skills for group work and community work; structural social work with groups and communities.

Precludes additional credit for SOWK 3200 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

SOWK 2300 [0.5 credit]**Drugs in Society: Theory, Policy, Practice**

Examines extent and nature of alcohol, prescription and illicit drug use, theories of drug dependence, history of drug policy; contemporary drug strategies and treatment in Canada.

Precludes additional credit for SOWK 2003 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002.

Lecture three hours a week.

SOWK 2301 [0.5 credit]**Working with Children and Youth**

Preventative and protective social work intervention with children and youth. Issues addressed include child neglect, abuse and violence in the context of family; organizational mandate and social political contexts. Programs and services for children and youth.

Precludes additional credit for SOWK 2201 (no longer offered).

Lecture three hours a week.

SOWK 3001 [0.5 credit]**Introduction to Research Methods in Social Work**

Research methods used in social work; research paradigms; quantitative and qualitative analysis in social work and social welfare; stages in conducting research.

Precludes additional credit for SOWK 2501 (no longer offered) and SOWK 2500 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3002 [0.5 credit]**Introduction to Statistical Analysis in Social Work**

Fundamentals of statistical analysis; descriptive and inferential statistics and their use in social work research. Statistical tests including Chi-Square, t-tests, correlations and simple linear regressions.

Precludes additional credit for SOWK 2500 (no longer offered), SOWK 2502 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3100 [0.5 credit]**Social Policy and Administration**

Understanding the welfare state and social policy in Canada; exploring issues in administration including program design and implementation; understanding and developing skills in policy-making and policy analysis. Canadian focus; recognition of the distinctiveness of social policy in Quebec.

Prerequisite(s): SOWK 2100 and third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3206 [0.5 credit]**Community Development and Social Change in an International Context**

Introduction to theories, models and methods of community organizing as a strategy for social change in an international context.

Prerequisite(s): SOWK 1001 and SOWK 1002; or PAPM 1001 and PSCI 2003, or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3207 [0.5 credit]**Human Rights Practice in Civil Society**

Examines the advocacy role and capacity of organizations in civil society to increase popular participation in promoting and protecting human rights; includes transnational and national non-governmental organizations, grassroots movements, community organizations, and virtual or Internet-based organizations.

Prerequisite(s): SOWK 1001 and SOWK 1002 or PAPM 1000 or HUMR 1001 or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3400 [0.5 credit]**Special Topics in Social Work**

Theory, policy or direct practice topics not covered in the regular course program. Choice of topics varies from year to year.

Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3600 [2.0 credits]**Practicum I (Fall and Winter)**

Focus on integrating theory and practice in an approved community setting supervised by a field supervisor.

Graded as Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3601, SOWK 3602.

Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of field work over two terms and concurrent practicum seminars.

SOWK 3601 [2.0 credits]**Practicum I (Winter Term)**

Focus on integrating theory and practice in an approved community setting supervised by a field supervisor; 352 field hours and compulsory field seminars. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3600, SOWK 3602.

Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of field work over one term and concurrent practicum seminars.

SOWK 3602 [2.0 credits]**Practicum I (Fall term)**

Focus on integrating theory and practice in an approved community setting supervised by a field supervisor;

352 field hours and compulsory field seminars. Limited enrolment in this course subject to discretion of Field coordinator. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3601, SOWK 3600.

Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of field work over one term and concurrent practicum seminars.

SOWK 3804 [0.5 credit]**Law of the Family**

Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.

Also listed as LAWS 3804.

Prerequisite(s): LAWS 1000, LAWS 2201 and LAWS 2003.

Lectures three hours a week.

SOWK 4000 [0.5 credit]**Social Work and Indigenous Peoples**

Social work in partnership with Indigenous peoples in Canada; impact of the past on current relationships; rebuilding through dialogue and respect; understanding Indigenous social work.

Precludes additional credit for SOWK 4200.

Prerequisite(s): third-year standing in Bachelor of Social Work.

Lecture three hours each week.

SOWK 4001 [0.5 credit]**Advanced Social Work Practice with Individuals and Families**

Advanced theory, methods, techniques, and skills for direct social work practice with individuals and families; individual and family assessments, treatment planning, intervention skills, and evaluation.

Includes: Experiential Learning Activity

Prerequisite(s): SOWK 2202 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4002 [0.5 credit]**Advanced Social Work Practice with Groups**

Advanced theory, methods, techniques, and skills for social work with groups; knowledge of group work and various group formats; and social work interventions in group process.

Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4003 [0.5 credit]**Advanced Social Work Practice with Communities**

Advanced theory, methods, techniques and skills for engaging in community-based practice. Politics and challenges of social work community organizing and strategies and skills for community work.

Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4004 [0.5 credit]**Social Policy Development and Practice**

Social policy development processes in government and non-governmental agencies; refining skills in evaluating and critiquing processes of policy formation; role of lobbying and social activism.

Prerequisite(s): SOWK 3100 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4102 [0.5 credit]**Indigenous Peoples and Social Policy**

History of colonization, legacy of colonialism, Royal Proclamation, BNA Act, treaties, impact of residential schools; implications of government social policy for Indigenous peoples in Canada; importance of self-determination and Declaration on the Rights of Indigenous Peoples.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4103 [0.5 credit]**Practice and Policy in Immigration**

History of immigration policies in Canada; direct practice with immigrants and refugees; diaspora, settlement and integration issues; immigrants and refugee women; intergenerational family relations; resources and community organizing.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4105 [0.5 credit]**Management of Non-Profit Organizations**

Introduction to theories, models and methods of managing non-profit organizations; role, nature and values of the non-profit sector in a market society; practical knowledge of management in different types of non-profit organizations (e.g. cooperatives, voluntary associations, public advocacy and community service organizations).

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4204 [0.5 credit]**Social Work and Aging**

Social perspectives on aging with focus on models of practice that contribute to the independence of elderly people. Social programs and policies, such as social insurance, social services, housing, public health and health care. Social, psychological and political issues related to independence in later life.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4206 [0.5 credit]**Feminist Counselling**

Examines theory and practice of feminist counselling, feminist counselling skills development.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4209 [0.5 credit]**Special Topics in Direct Social Work Practice**

Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4210 [0.5 credit]**Special Topics in Direct Social Work Practice**

Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4211 [0.5 credit]**Special Topics in Social Policy**

Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): SOWK 3100 and third year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4212 [0.5 credit]**Special Topics in Social Policy**

Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): SOWK 3100 and third year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4213 [0.5 credit]**Special Topics in Social Work**

Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4214 [0.5 credit]**Special Topics in Social Work**

Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4300 [0.5 credit]**Social Work and Persons with Disabilities**

Social work theory and practice with persons with disabilities. Structural analysis of theory, models, policies and practices; disability rights; critical analysis of medical model and ableism.

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4301 [0.5 credit]**Racialization and Social Work**

Social work and racialization; racism and consequences; critical analysis of cultural formations, difference, and identities; critical examination of whiteness and privilege.

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4302 [0.5 credit]**Poverty and Social Welfare Policy**

Social work analysis of theories of poverty and economic inequality; labour force participation; poverty and wealth and income distribution in Canada and international comparisons; Canadian social policies and poverty.

Precludes additional credit for SOWK 4101 (no longer offered).

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4303 [0.5 credit]**Gender and Sexuality**

Social work and social, political, institutional and economic relations shaping everyday experiences of gender and sexuality and implications for contemporary social work.

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4600 [2.0 credits]**Practicum II (Fall or Summer Terms)**

Development, application, testing and integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or in social administration and policy. Graded Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 4601, SOWK 4602.

Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of fieldwork and concurrent practicum seminars.

SOWK 4601 [1.0 credit]**Practicum IIA**

Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part one of two part practicum taken consecutively with SOWK 4602.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 4600.

Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

176 hours of fieldwork and concurrent practicum seminars.

SOWK 4602 [1.0 credit]**Practicum IIB**

Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part two of two part practicum taken consecutively with SOWK 4601.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 4600.

Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, SOWK 4601 and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

176 hours of fieldwork and concurrent practicum seminars.

SOWK 4701 [0.5 credit]**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Law.

Also listed as LAWS 4701.

Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4702 [0.5 credit]**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Sociology.

Also listed as LAWS 4702, SOCI 4702.

Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4703 [0.5 credit]**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the School of Social Work.

Also listed as LAWS 4703.

Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4908 [1.0 credit]**Honours Essay**

Research essay under supervision of accredited faculty member. Project may be in the form of case study, historical study or other form that meets the approval of faculty advisor.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Social Work and permission of the School of Social Work.

Sociology

This section presents the requirements for programs in:

- Sociology B.A. Honours
- Sociology B.A. Combined Honours
- Sociology B.A.
- Stream in Social Justice
- Specialization in Global Inequalities and Social Change B.G.In.S. Honours
- Stream in Global Inequalities and Social Change B.G.In.S.
- Minor in Community Engagement
- Minor in Sociology

Program Requirements**Sociology****B.A. Honours (20.0 credits)****A. Credits Included in the Major CGPA (9.0 credits)**

1. 1.0 credit from:	1.0
SOCI 1001 [0.5]	Introduction to Sociology I
& SOCI 1002 [0.5]	Introduction to Sociology II
SOCI 1003 [1.0]	Introduction to Sociological Perspectives
2. 0.5 credit in:	0.5
SOCI 2000 [0.5]	Foundations of Sociological Inquiry
3. 0.5 credit from:	0.5
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods
SOCI 3000 [0.5]	Descriptive Statistics in Social Research
4. 0.5 credit from:	0.5
SOCI 3002 [0.5]	Inferential Statistics in Social Research
SOCI 3004 [0.5]	Qualitative Research: Approaches and Strategies
5. 1.5 credits in:	1.5
SOCI 2005 [1.0]	Histories of Sociological Thought

SOCI 3006 [0.5] Thinking the Social: Theories and Approaches

6. 1.5 credits in SOCI at the 4000 level, to include either SOCI 4700 [0.5] or SOCI 4900 [1.0]	1.5
7. 1.0 credit in SOCI and/or ANTH at the 4000 level	1.0
8. 1.0 credit in SOCI at the 2000 level or above	1.0
9. 1.5 credits in SOCI and/or ANTH at the 2000 level or above	1.5
B. Credits Not Included in the Major CGPA (11.0 credits)	
10. 0.5 credit in:	0.5
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology
11. 8.0 credits not in SOCI	8.0
12. 2.5 credits in free electives	2.5
Total Credits	20.0

Sociology**B.A. Combined Honours (20.0 credits)****A. Credits Included in the Sociology Major CGPA (7.0 credits)**

1. 1.0 credit from:	1.0
SOCI 1001 [0.5]	Introduction to Sociology I
& SOCI 1002 [0.5]	Introduction to Sociology II
SOCI 1003 [1.0]	Introduction to Sociological Perspectives
2. 0.5 credit in:	0.5
SOCI 2000 [0.5]	Foundations of Sociological Inquiry
3. 0.5 credit from:	0.5
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods
SOCI 3000 [0.5]	Descriptive Statistics in Social Research
4. 1.0 credit in:	1.0
SOCI 2005 [1.0]	Histories of Sociological Thought
5. 1.0 credit in SOCI at the 4000 level	1.0
6. 1.0 credit in SOCI and/or ANTH at the 4000 level	1.0
7. 1.0 credit in SOCI at the 2000 level or above	1.0
8. 1.0 credit in SOCI and/or ANTH at the 2000 level or above	1.0
B. Additional Requirements (13.0 credits):	13.0
9. The requirements for the other discipline must be satisfied	
10. Sufficient credits in free electives to make 20.0 credits for the degree	
Total Credits	20.0

Sociology**B.A. (15.0 credits)****A. Credits Included in the Major CGPA (6.0 credits)**

1. 1.0 credit from:	1.0
SOCI 1001 [0.5]	Introduction to Sociology I
& SOCI 1002 [0.5]	Introduction to Sociology II
SOCI 1003 [1.0]	Introduction to Sociological Perspectives
2. 0.5 credit in:	0.5
SOCI 2000 [0.5]	Foundations of Sociological Inquiry
3. 0.5 credit from:	0.5

SOCI 2001 [0.5]	Introduction to Qualitative Research Methods	
SOCI 3000 [0.5]	Descriptive Statistics in Social Research	
4. 1.0 credit in:		1.0
SOCI 2005 [1.0]	Histories of Sociological Thought	
5. 1.5 credits in SOCI at the 3000-level or above		1.5
6. 1.5 credits in SOCI at the 2000-level or above		1.5
B. Credits Not Included in the Major CGPA (9.0 credits)		
7. 0.5 credit in:		0.5
ANTH 1001 [0.5]	Introduction to Socio-Cultural Anthropology	
8. 6.0 credits not in SOCI or ANTH		7.0
9. 2.5 credits in free electives		1.5
Total Credits		15.0

Stream in Social Justice (2.0 credits)

The Stream in Social Justice is open to all students in Sociology Honours and Combined Honours programs.

Requirements:

1. 0.5 credit in:		0.5
SOCI 2170 [0.5]	Foundations in Social Justice	
2. 0.5 credit in:		0.5
SOCI 3170 [0.5]	Social Justice in Action	
3. 0.5 credit in:		0.5
SOCI 3430 [0.5]	Studies in Collective Action and Social Movements	
4. 0.5 credit in:		0.5
SOCI 4170 [0.5]	Community-Engaged Sociology	
Total Credits		2.0

Bachelor of Global and International Studies (B.G.In.S.)

Note: Details regarding graduation requirements, the international experience requirement, and the language requirement for the B.G.In.S. degree can be found at the B.G.In.S. program page.

Specialization in Global Inequalities and Social Change

B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses		4.5
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5]	Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation		

GINS 1300 [0.0]	International Experience Requirement Preparation	
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3. 7.5 credits in: the Specialization

a. 1.0 credit in: Foundations		1.0
SOCI 1001 [0.5]	Introduction to Sociology I	
& SOCI 1002 [0.5]	Introduction to Sociology II	
Or:		
SOCI 1003 [1.0]	Introduction to Sociological Perspectives	
b. 1.5 credits in: Research Methods		1.5
SOCI 2000 [0.5]	Foundations of Sociological Inquiry	
And 1.0 credit from:		
SOCI 2001 [0.5]	Introduction to Qualitative Research Methods	
SOCI 3000 [0.5]	Descriptive Statistics in Social Research	
SOCI 3002 [0.5]	Inferential Statistics in Social Research	
SOCI 3004 [0.5]	Qualitative Research: Approaches and Strategies	
c. 1.0 credit in: Theory		1.0
SOCI 2005 [1.0]	Histories of Sociological Thought	
d. 1.0 credit from: Global Inequalities and Social Change at the 2000-level		1.0
SOCI 2010 [0.5]	Critical Approaches to Economic Inequality	
SOCI 2020 [0.5]	Race and Ethnicity	
SOCI 2030 [0.5]	Work, Industry and Occupations	
SOCI 2035 [0.5]	Technology, Culture and Society	
SOCI 2040 [0.5]	Food, Culture and Society	
SOCI 2045 [0.5]	Gender and Society	
SOCI 2060 [0.5]	Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives	
SOCI 2160 [0.5]	War and Society	
SOCI 2170 [0.5]	Foundations in Social Justice	
SOCI 2702 [0.5]	Power and Social Change	
SOCI 2705 [0.5]	Popular Culture in the Digital Age	
SOCI 2810 [0.5]	Selected Topics in Sociology	
SOCI 2820 [0.5]	Selected Topics in Sociology	
e. 1.5 credits from: Global Inequalities and Social Change at the 3000-level		1.5
SOCI 3006 [0.5]	Thinking the Social: Theories and Approaches	
SOCI 3010 [0.5]	Power, Oppression and Resistance	
SOCI 3019 [0.5]	Sociology of International Migration	
SOCI 3020 [0.5]	Studies in Race and Ethnicity	
SOCI 3027 [0.5]	Globalization and Human Rights	
SOCI 3030 [0.5]	Studies in Work, Industry and Occupations: Authority and Expertise	
SOCI 3035 [0.5]	Science, Culture and Society: Social Studies of Science	
SOCI 3038 [0.5]	Studies in Urban Sociology	
SOCI 3040 [0.5]	Studies in the Sociology of Gender	
SOCI 3044 [0.5]	Sociology of Sex and Sexuality	
SOCI 3045 [0.5]	Children and Childhood in a Globalized World	
SOCI 3160 [0.5]	Political Violence	

SOCI 3170 [0.5]	Social Justice in Action	
SOCI 3210 [0.5]	Selected Topics in Sociology	
SOCI 3220 [0.5]	Selected Topics in Sociology	
SOCI 3430 [0.5]	Studies in Collective Action and Social Movements	
SOCI 3570 [0.5]	Studies in Art, Culture and Society	
SOCI 3710 [0.5]	Introduction to Cultural Studies	
SOCI 3805 [0.5]	Studies in Population	
f. 1.5 credits from: Honours Seminars and Honours Thesis		1.5
SOCI 4002 [0.5]	Advanced Studies in Sociological Theory	
SOCI 4003 [0.5]	Advanced Studies in Qualitative Research	
SOCI 4009 [0.5]	Advanced Studies in Quantitative Research	
SOCI 4020 [0.5]	Advanced Studies in Race and Ethnicity	
SOCI 4039 [0.5]	Women in Contemporary Middle East Societies	
SOCI 4040 [0.5]	Feminist Sociology of Intersectionality	
SOCI 4160 [0.5]	War, Terrorism and State Terrorism	
SOCI 4170 [0.5]	Community-Engaged Sociology	
SOCI 4200 [0.5]	War, Security and Citizenship	
SOCI 4730 [0.5]	Colonialism and Post-Colonialism	
SOCI 4750 [0.5]	Advanced Studies in Globalization and Citizenship	
SOCI 4850 [0.5]	Contemporary Problems in Sociology	
SOCI 4860 [0.5]	Contemporary Problems in Sociology	
SOCI 4900 [1.0]	Honours Thesis	
SOCI 4910 [0.5]	Tutorial in Sociology	
SOCI 4920 [0.5]	Tutorial in Sociology	

B. Credits Not Included in the Major CGPA (8.0 credits)

4. 8.0 credits in: Free Electives **8.0**

C. Additional Requirements

5. The International Experience requirement must be met.

6. The Language requirement must be met.

Total Credits **20.0**

**Stream in Global Inequalities and Social Change
B.G.In.S. (15.0 credits)**

A. Credits Included in the Major CGPA (8.0 credits)

1. 4.0 credits in: Core Courses **4.0**

GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	

2. 4.0 credits in: the Stream **4.0**

a. 1.0 credit in: Foundations

SOCI 1001 [0.5] Introduction to Sociology I
& SOCI 1002 [0.5] Introduction to Sociology II

Or

SOCI 1003 [1.0] Introduction to Sociological Perspectives

b. 1.0 credit in: Research Methods

SOCI 2000 [0.5] Foundations of Sociological Inquiry

and 0.5 credit from:

SOCI 2001 [0.5] Introduction to Qualitative Research Methods

SOCI 3000 [0.5] Descriptive Statistics in Social Research

c. 1.0 credit in: Theory

SOCI 2005 [1.0] Histories of Sociological Thought

d. 1.0 credit in: Global Inequalities and Social Change Electives at the 2000 or 3000 level

SOCI 2010 [0.5] Critical Approaches to Economic Inequality

SOCI 2020 [0.5] Race and Ethnicity

SOCI 2030 [0.5] Work, Industry and Occupations

SOCI 2035 [0.5] Technology, Culture and Society

SOCI 2040 [0.5] Food, Culture and Society

SOCI 2045 [0.5] Gender and Society

SOCI 2060 [0.5] Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives

SOCI 2160 [0.5] War and Society

SOCI 2170 [0.5] Foundations in Social Justice

SOCI 2702 [0.5] Power and Social Change

SOCI 2705 [0.5] Popular Culture in the Digital Age

SOCI 2810 [0.5] Selected Topics in Sociology

SOCI 2820 [0.5] Selected Topics in Sociology

SOCI 3002 [0.5] Inferential Statistics in Social Research

SOCI 3004 [0.5] Qualitative Research: Approaches and Strategies

SOCI 3006 [0.5] Thinking the Social: Theories and Approaches

SOCI 3010 [0.5] Power, Oppression and Resistance

SOCI 3019 [0.5] Sociology of International Migration

SOCI 3020 [0.5] Studies in Race and Ethnicity

SOCI 3027 [0.5] Globalization and Human Rights

SOCI 3030 [0.5] Studies in Work, Industry and Occupations: Authority and Expertise

SOCI 3035 [0.5] Science, Culture and Society: Social Studies of Science

SOCI 3038 [0.5] Studies in Urban Sociology

SOCI 3040 [0.5] Studies in the Sociology of Gender

SOCI 3044 [0.5] Sociology of Sex and Sexuality

SOCI 3045 [0.5] Children and Childhood in a Globalized World

SOCI 3160 [0.5] Political Violence

SOCI 3170 [0.5] Social Justice in Action

SOCI 3210 [0.5] Selected Topics in Sociology

SOCI 3220 [0.5] Selected Topics in Sociology

SOCI 3430 [0.5] Studies in Collective Action and Social Movements

SOCI 3570 [0.5] Studies in Art, Culture and Society

SOCI 3710 [0.5]	Introduction to Cultural Studies	
SOCI 3805 [0.5]	Studies in Population	
B. Credits Not Included in the Major CGPA (7.0 credits)		
3. 7.0 credits in:	Free Electives	7.0
C. Additional Requirements		
4. The Language requirement must be met.		
Total Credits		15.0

Minor in Community Engagement (4.0 credits)

This minor is open to all undergraduate degree students in any program. Students in any Sociology or Anthropology major should select courses carefully if they wish to use courses from the major in their minor. Such students should always consult the department.

Requirements:

1. 0.5 credit from:		0.5
ANTH 2180 [0.5]	Foundations in Community Engagement	
SOCI 2180 [0.5]	Foundations in Community Engagement	
2. 0.5 credit from:		0.5
ANTH 4171 [0.5]	Community Engagement Capstone	
SOCI 4171 [0.5]	Community Engagement Capstone	
3. 1.0 credit from	Engaging the Community courses:	1.0
AFRI 3900 [0.5]	Placement	
ANTH 4000 [0.5]	Field Placement in Anthropology	
ANTH 4100 [0.5]	Ethnographic Field Course	
ARTH 3701 [0.5]	Art and Architecture on Site	
ARTH 4701 [0.5]	Art and Architecture on Site	
CDNS 1101 [0.5]	Power, Places and Stories in/of Odawang/Ottawa	
CDNS 4800 [1.0]	Internship Practicum	
CRCJ 3901 [1.0]	Practicum in Criminology I	
CRCJ 3902 [1.0]	Practicum in Criminology II	
DIGH 4005 [0.5]	Digital Humanities Practicum	
ENST 4450 [0.5]	Community-Engaged Research	
GEOG 3030 [0.5]	Regional Field Excursion	
GEOG 4000 [0.5]	Field Studies	
GEOG 4450 [0.5]	Community-Engaged Research	
GINS 3100 [0.5]	Global and International Group Project	
GINS 3900 [0.5]	International Placement	
GINS 3901 [1.0]	International Placement	
GINS 3930 [0.5]	Carleton International Placement	
GINS 3931 [1.0]	Carleton International Placement	
HIST 3807 [0.5]	Practicum in History	
HIST 3815 [0.5]	Group Practicum	
HLTH 4909 [1.0]	Capstone Course – Field Placement and Research Project	
HUMR 4905 [0.5]	Practicum Placement in Human Rights I	
INDG 4001 [0.5]	Indigeneity in the City	
INDG 4015 [0.5]	Land as a Relation	
INDG 4020 [0.5]	Practicum	
LAWS 4905 [1.0]	Full-Year Service Learning Placement	
MPAD 3002 [0.5]	Civic Engagement and Public Institutions I	

MPAD 3003 [0.5]	Civic Engagement and Public Institutions II: Minor Design Project	
PHIL 2320 [0.5]	Children, Literature, and Philosophy	
PSCI 3906 [1.0]	Full-Year Political Science Internship	
PSCI 3907 [0.5]	One-Term Political Science Internship	
PSYC 3901 [0.5]	Practicum in Psychology	
PSYC 3902 [0.5]	Practicum in Psychology	
PSYC 3905 [1.0]	Practicum in Psychology	
PSYC 4330 [1.0]	Community Mental Health and Well-Being	
SOCI 3950 [0.5]	Practicum Placement in Sociology	
SOCI 4170 [0.5]	Community-Engaged Sociology	
WGST 4800 [0.5]	Women's and Gender Studies Practicum	
WGST 4801 [1.0]	Women's and Gender Studies Practicum	
4. 2.0 credits from	Critically Understanding Communities	2.0
courses:		
AFRI 3100 [0.5]	African Studies Abroad: Selected Topics	
ALDS 3205 [0.5]	English as a Global Language	
ANTH 2020 [0.5]	Race and Ethnicity	
ANTH 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research	
ANTH 2680 [0.5]	Anthropology of "Mainstream" North America	
ANTH 3005 [0.5]	Ethnographic Research Methods	
ANTH 3010 [0.5]	Language, Culture, and Globalization	
ANTH 3020 [0.5]	Studies in Race and Ethnicity	
ANTH 3025 [0.5]	Anthropology and Human Rights	
ANTH 3310 [0.5]	Studies in Medical Anthropology	
ANTH 3355 [0.5]	Anthropology and the Environment	
ANTH 3580 [0.5]	Anthropology of Material Culture and Museums	
ANTH 3600 [0.5]	Studies in Anthropology and Indigenous Peoples	
ANTH 3800 [0.5]	Studies in Applied and Participatory Anthropology	
ANTH 4006 [0.5]	Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology	
ANTH 4610 [0.5]	Advanced Studies in Indigenous Peoples	
ANTH 4730 [0.5]	Colonialism and Post-Colonialism	
CDNS 2210 [0.5]	Introduction to the Study of Culture in Canada	
CRST 2001 [0.5]	Introduction to Critical Race Studies	
DBST 2001 [0.5]	Disabling Society	
DBST 3001 [0.5]	Disability Studies: Policy and Activism	
DIGH 3814 [0.5]	Crafting Digital History	
ENGL 3608 [0.5]	Topics in Theatre Management	
ENGL 3920 [0.5]	Literary Ecological Fieldwork	
ENST 2001 [0.5]	Sustainable Futures: Environmental Challenges and Solutions	

FILM 2204 [0.5]	Indigenous Cinema and Media	MUSI 4306 [0.5]	Music and Wellbeing in a Global Context
FYSM 1212 [0.5]	Contemporary Moral, Social, and Religious Issues	PHIL 1550 [0.5]	Introduction to Ethics and Social Issues
GEOG 2023 [0.5]	Cities, Inequality and Urban Change	PHIL 2103 [0.5]	Philosophy of Human Rights
GEOG 2300 [0.5]	Space, Place and Culture	PHIL 2306 [0.5]	Philosophy and Feminism
GEOG 2500 [0.5]	Climate Change: Social Science Perspectives	PHIL 2307 [0.5]	Gender and Philosophy
GEOG 3021 [0.5]	Geographies of Culture and Identity	PHIL 2380 [0.5]	Introduction to Environmental Ethics
GEOG 3023 [0.5]	Cities in a Global World	PHIL 3340 [0.5]	Topics in Contemporary Social and Political Philosophy
GEOG 3206 [0.5]	Health, Environment, and Society	PHIL 3350 [0.5]	Philosophy, Ethics, and Public Affairs
GEOG 3404 [0.5]	Geographies of Economic Development	PHIL 3360 [0.5]	Philosophy, Economics, and Public Policy
GEOG 3501 [0.5]	Geographies of the Canadian North	PHIL 3380 [0.5]	Environments, Technology and Values
GEOG 4021 [0.5]	Seminar in Culture, Identity and Place	PSCI 2500 [0.5]	Gender and Politics
GEOG 4022 [0.5]	Seminar in People, Resources and Environmental Change	PSCI 3006 [0.5]	Social Power in Canadian Politics
GEOG 4323 [0.5]	Urban and Regional Planning	PSYC 2301 [0.5]	Introduction to Health Psychology
GINS 3300 [0.5]	Global and International Studies Abroad: Selected Topics	SOCI 2010 [0.5]	Critical Approaches to Economic Inequality
HIST 2811 [0.5]	Public History from Memory to Museums	SOCI 2020 [0.5]	Race and Ethnicity
HIST 3814 [0.5]	Crafting Digital History	SOCI 2030 [0.5]	Work, Industry and Occupations
HLTH 2003 [0.5]	Social Determinants of Health	SOCI 2040 [0.5]	Food, Culture and Society
HLTH 3101 [0.5]	Global Health	SOCI 2043 [0.5]	Sociology of the Family
HLTH 3102 [0.5]	Indigenous Health in a Global World	SOCI 2045 [0.5]	Gender and Society
HUMR 3504 [0.5]	Public Health and Human Rights	SOCI 2080 [0.5]	Humans/Animals: the More-than-Human in Social Research
IDES 2600 [0.5]	Human Factors/Ergonomics in Design	SOCI 2170 [0.5]	Foundations in Social Justice
IDES 3107 [0.5]	Design and Sustainability	SOCI 2450 [0.5]	Crime and Society
IDES 3601 [0.5]	Research for Design	SOCI 2702 [0.5]	Power and Social Change
INDG 3001 [0.5]	Indigenous Governance	SOCI 2705 [0.5]	Popular Culture in the Digital Age
INDG 3011 [0.5]	Indigenous Rights, Resistance, and Resurgence	SOCI 3010 [0.5]	Power, Oppression and Resistance
LAWS 2105 [0.5]	Social Justice and Human Rights	SOCI 3019 [0.5]	Sociology of International Migration
LAWS 3307 [0.5]	Youth and Criminal Law	SOCI 3020 [0.5]	Studies in Race and Ethnicity
LAWS 3503 [0.5]	Equality and Discrimination	SOCI 3030 [0.5]	Studies in Work, Industry and Occupations: Authority and Expertise
LAWS 3504 [0.5]	Law and Aboriginal Peoples	SOCI 3038 [0.5]	Studies in Urban Sociology
LAWS 3800 [0.5]	Law of Environmental Quality	SOCI 3040 [0.5]	Studies in the Sociology of Gender
LAWS 4001 [0.5]	Law, Family and Gender	SOCI 3044 [0.5]	Sociology of Sex and Sexuality
LAWS 4305 [0.5]	Criminal Justice Reform	SOCI 3050 [0.5]	Studies in the Sociology of Health
LAWS 4311 [0.5]	Human Rights in Canadian Prisons	SOCI 3055 [0.5]	Studies in Addictions
LAWS 4503 [0.5]	Law, Disability and Society	SOCI 3056 [0.5]	Women and Health
LAWS 4504 [0.5]	Indigenous Criminal Justice	SOCI 3060 [0.5]	Critical Disability Studies
LAWS 4603 [0.5]	Transitional Justice	SOCI 3170 [0.5]	Social Justice in Action
LAWS 4607 [0.5]	Immigration and Refugee Law	SOCI 3300 [0.5]	Studies in the Sociology of Education
LAWS 4800 [0.5]	Environment and Social Justice	SOCI 3430 [0.5]	Studies in Collective Action and Social Movements
MUSI 2008 [0.5]	Music of the World's Peoples	SOCI 3480 [0.5]	Law and Social Regulation
MUSI 3103 [0.5]	Music in Canada	SOCI 4040 [0.5]	Feminist Sociology of Intersectionality
MUSI 3302 [0.5]	Music and Gender I	SOCI 4730 [0.5]	Colonialism and Post-Colonialism
MUSI 4102 [0.5]	Ethnomusicology in Theory and Practice	SOWK 2005 [0.5]	Values and Ethics for Social Work
MUSI 4103 [0.5]	Music, Migration and Diaspora in Canada	SOWK 2203 [0.5]	Introduction to Social Work Practice with Groups and Communities
MUSI 4104 [0.5]	First Peoples Music in Canada		
MUSI 4303 [0.5]	Music and Gender II		

SOWK 3207 [0.5]	Human Rights Practice in Civil Society
SOWK 4000 [0.5]	Social Work and Indigenous Peoples
SOWK 4003 [0.5]	Advanced Social Work Practice with Communities
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction
SXST 2102 [0.5]	Sexuality, Gender, and Security
SXST 4104 [0.5]	Sexuality and Political Economy
TSES 3001 [0.5]	Technology-Society Interactions
TSES 4006 [0.5]	Technology and Society: Work
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice

5. The remaining requirements of the major discipline(s) and degree must be satisfied.

Total Credits **4.0**

Minor in Sociology (4.0 credits)

Open to all undergraduate degree students in programs other than Sociology, the B.A. in Criminology and Criminal Justice with a concentration in Sociology, or the B.G.In.S. Stream/Specialization in Global Inequalities and Social Change. Students in any Anthropology major should select courses carefully if they wish to use courses from the major in their minor Sociology. Such students should always consult the department.

Requirements

1. 1.0 credit from:	1.0
SOCI 1001 [0.5]	Introduction to Sociology I
& SOCI 1002 [0.5]	Introduction to Sociology II
SOCI 1003 [1.0]	Introduction to Sociological Perspectives
2. 1.0 credit in:	1.0
Methods: SOCI 2000 plus one of SOCI 2001 or SOCI 3000	
or	
Theory: SOCI 2005 [1.0]	
3. 2.0 credits in SOCI at the 2000-level or above	2.0
4. The remaining requirements of the major discipline(s) and degree must be satisfied.	

Total Credits **4.0**

Regulations

First Year Courses

Students may receive credit for SOCI 1001 and SOCI 1002, or SOCI 1003. Only one of these credits will be included in the Major CGPA. The other will count against the total number of credits in sociology and/or anthropology.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, ERTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAMP, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry

and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Co-operative Education

For more information about how to apply for the Co-op program and how the Co-op program works please visit the Co-op website.

All students participating in the Co-op program are governed by the Undergraduate Co-operative Education Policy.

Undergraduate Co-operative Education Policy Admission Requirements

Students can apply to Co-op in one of two ways: directly from high school, or after beginning a degree program at Carleton.

If a student applies to a degree program with a Co-op option from high school, their university grades will be reviewed two terms to one year prior to their first work term to ensure they meet the academic requirements after their first or second year of study. The time at which the evaluation takes place depends on the program of study.

Students will automatically receive an admission decision via their Carleton email account.

Students who did not request Co-op at the time they applied to Carleton can request Co-op after they begin their university studies. To view application instructions and deadlines, please visit carleton.ca/co-op.

To be admitted to Co-op, a student must successfully complete 5.0 or more credits that count towards their degree, meet the minimum CGPA requirement(s) for the student's Co-op option, and fulfil any specified course prerequisites. To see the unique admission and continuation requirements for each Co-op option, please refer to the specific degree programs listed in the Undergraduate Calendar.

Participation Requirements

COOP 1000

Once a student has been given admission or continuation confirmation to the co-op option s/he must complete and pass COOP 1000 (a mandatory online 0.0 credit course). Students will have access to this course a minimum of two terms prior to their first work term and will be notified when to register.

Communication with the Co-op Office

Students must maintain contact with the co-op office during their job search and while on a work term. All email communication will be conducted via the students' Carleton email account.

Employment

Although every effort is made to ensure a sufficient number of job postings for all students enrolled in the co-op option of their degree program, no guarantee of employment can be made. Carleton's co-op program operates a competitive job search process and is dependent upon current market conditions. Academic performance, skills, motivation, maturity, attitude and potential will determine whether a student is offered a job. It is the student's responsibility to actively conduct a job search in addition to participation in the job search process operated by the co-op office. Once a student accepts a co-op job offer (verbally or written), his/her job search will end and access to co-op jobs will be removed for that term. Students that do not successfully obtain a co-op work term are expected to continue with their academic studies. The summer term is the exception to this rule. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Federal Government of Canada.

Registering in Co-op Courses

Students will be registered in a Co-op Work Term course while at work. The number of Co-op Work Term courses that a student is registered in is dependent upon the number of four-month work terms that a student accepts.

While on a co-op work term students may take a maximum of 0.5 credit throughout each four-month co-op work term. Courses must be scheduled outside of regular working hours.

Students must be registered as full-time before they begin their co-op job search (2.0 credits). All co-op work

terms must be completed before the beginning of the final academic term. Students may not finish their degree on a co-op work term.

Work Term Assessment and Evaluation

To obtain a Satisfactory grade for the co-op work term students must have:

1. A satisfactory work term evaluation by the co-op employer;
2. A satisfactory grade on the work term report.

Students must submit a work term report at the completion of each four-month work term. Reports are due on the 16th of April, August, and December and students are notified of due dates through their Carleton email account.

Workplace performance will be assessed by the workplace supervisor. Should a student receive an unsatisfactory rating from their co-op employer, an investigation by the co-op program manager will be undertaken. An unsatisfactory employer evaluation does not preclude a student from achieving an overall satisfactory rating for the work term.

Graduation with the Co-op Designation

In order to graduate with the co-op designation, students must satisfy all requirements for their degree program in addition to the requirements according to each co-op program (i.e. successful completion of three or four work terms).

Note: Participation in the co-op option will add up to one additional year for a student to complete their degree program.

Voluntary Withdrawal from the Co-op Option

Students may withdraw from the co-op option of their degree program during a study term ONLY. Students at work may not withdraw from the work term or the co-op option until s/he has completed the requirements of the work term.

Students are eligible to continue in their regular academic program provided that they meet the academic standards required for continuation.

Involuntary or Required Withdrawal from the Co-op Option

Students may be required to withdraw from the co-op option of their degree program for one or any of the following reasons:

1. Failure to achieve a grade of SAT in COOP 1000
2. Failure to pay all co-op related fees
3. Failure to actively participate in the job search process
4. Failure to attend all interviews for positions to which the student has applied
5. Declining more than one job offer during the job search process
6. Continuing a job search after accepting a co-op position
7. Dismissal from a work term by the co-op employer
8. Leaving a work term without approval by the Co-op manager

9. Receipt of an unsatisfactory work term evaluation
10. Submission of an unsatisfactory work term report

Standing and Appeals

The Co-op and Career Services office administers the regulations and procedures that are applicable to all co-op program options. All instances of a student's failure during a work term or other issues directly related to their participation in the co-op option will be reported to the academic department.

Any decision made by the Co-op and Career Services office can be appealed via the normal appeal process within the University.

International Students

All International Students are required to possess a Co-op Work Permit issued by Immigration, Refugees and Citizenship Canada before they can begin working. It is illegal to work in Canada without the proper authorization. Students will be provided with a letter of support to accompany their application. Students must submit their application for their permit before being permitted to view and apply for jobs on the Co-op Services database. Confirmation of a position will not be approved until a student can confirm they have received their permit. Students are advised to discuss the application process and requirements with the International Student Services Office.

B.A. Honours Sociology: Co-op Admission and Continuation Requirements

- Maintain full-time status in each study term (2.0 credits);
- Be eligible to work in Canada (for off-campus work)
- Have successfully completed COOP 1000 [0.0]

In addition to the following:

1. Registered in the B.A. Honours Sociology program;
2. Have a minimum overall CGPA of 7.0 and major CGPA of 8.0 in the first two years of academic study;
3. Successfully completed, by the start-date of the first work term, the required first-year courses, second-year courses, SOCI 2000 and SOCI 2001 or SOCI 3000

Students in B.A. Honours Sociology must successfully complete three (3) work terms to obtain the Co-op designation.

Co-op Work Term Course: SOCI 3999

Work/Study Pattern:

Year 1		Year 2		Year 3		Year 4		Year 5	
Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern	Term	Pattern
Fall	S	Fall	S	Fall	S	Fall	W/S	Fall	W/S
Winter	S	Winter	S	Winter	S	Winter	W/S	Winter	S
Summer		Summer		Summer	W	Summer	W		

Legend

S: Study

W: Work

O: Optional

* indicates recommended work study pattern

** student finds own employer for this work-term.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Direct Admission to the First Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European, Russian, and Eurasian Studies, French, Geography, Geography with a Concentration in Physical Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Sociology (SOC) Courses

SOCI 1001 [0.5 credit]

Introduction to Sociology I

Introduction to the discipline of sociology; theory, methods, history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society. Emphasis on the everyday world of lived experience and social relations. Topics may include class, gender, sexuality, racialization, culture, social interaction. Includes: Experiential Learning Activity
Precludes additional credit for SOCI 1003.
Lectures/discussion groups three hours a week.

SOCI 1002 [0.5 credit]

Introduction to Sociology II

This course will further explore and expand upon the key thinkers, concepts and disciplinary subfields in sociology. The focus of analysis will shift from the everyday world to social institutions and structural processes. Topics may include globalization, education, media, health, social movements, colonialism, urbanization. Includes: Experiential Learning Activity
Precludes additional credit for SOCI 1003, SOCI 1005.
Prerequisite(s): SOCI 1001.
Lectures/discussion groups three hours a week.

SOCI 1003 [1.0 credit]

Introduction to Sociological Perspectives

Introduction to the discipline of sociology; theory, methods and history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society.
Precludes additional credit for SOCI 1000, SOCI 1001 and SOCI 1002.
Lectures/discussion groups three hours a week.

SOCI 1005 [0.5 credit]**Sociology for Bachelor of Commerce Students**

The origins of sociology, why sociology matters, and how it is practiced. Concepts such as class, race, ethnicity, gender, sexual orientation, work, organization, and social movements help students develop their sociological 'eye' for thinking critically about society and their place within it. Precludes additional credit for SOCI 1002.

Prerequisite(s): restricted to B.Com. students.

Lecture three hours a week.

SOCI 2000 [0.5 credit]**Foundations of Sociological Inquiry**

Introduction to sociological inquiry through the study of sociological approaches to knowledge, the relationship of theory to methods, introduction to different methodological traditions including their epistemological foundations, value and limitations. Students will acquire foundational academic skills.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours per week.

SOCI 2001 [0.5 credit]**Introduction to Qualitative Research Methods**

Introduction to theory and practice of qualitative research methods involving human participants: research design; ethics; data analysis; data generation methods. Methods may include: qualitative interviewing, ethnography, oral history, focus groups, observation. Additional topics may include: historical development/debates in qualitative research/key historical studies.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 2003 (no longer offered).

Prerequisite(s): SOCI 2000.

Lectures/discussion groups or labs three hours a week.

SOCI 2005 [1.0 credit]**Histories of Sociological Thought**

Traces theoretical traditions in sociological thought, situating traditions within historical, social and intellectual contexts. At least four of the following will be covered: orientalism, imperialism, colonialism; capitalism, social organization, rationalization; subject formation, identity; self and the everyday; work and leisure; and, social change and revolution.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2010 [0.5 credit]**Critical Approaches to Economic Inequality**

Theoretical and empirical examination of economic inequalities in Canada. Topics may include the experience of economic marginalization, how economic inequality is reproduced, how economic inequalities intersect with other forces, such as gender and racialized inequality, and struggles to transform the economic organisation of society.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 3405 (no longer offered) and SOCI 3407 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2020 [0.5 credit]**Race and Ethnicity**

Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally.

Also listed as ANTH 2020.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2030 [0.5 credit]**Work, Industry and Occupations**

An analysis of work practices and settings in societies. Topics of interest include the development of industrial and postindustrial societies; the experience of work, the structuring of work in organizations and in the society; conflict, resistance and labour relations, and the impact of new technologies.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2035 [0.5 credit]**Technology, Culture and Society**

Introduction to the principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.

Also listed as DIGH 2035.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2040 [0.5 credit]**Food, Culture and Society**

The sociological analysis of food and eating. The relationship between food and identity; the development of social movements organized around food; and more generally, on practices relating to the production, preparation, and consumption of food.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2043 [0.5 credit]**Sociology of the Family**

How do we conceptualize the family? How has family changed over history? What are the diverse realities of families today? This course examines different family forms, relations and dynamics, emphasizing the relationship between family and larger social forces, such as gender, immigration or class.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2045 [0.5 credit]**Gender and Society**

How gender and gender relations play out in everyday lives, and how people resist, reproduce, or reinforce gender norms. Considers how gender shapes experiences of family, school, work, media, relationships, bodies, violence, etc. Canadian and global cases are examined.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 2407 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2050 [0.5 credit]**Sociology of Health**

Critical approaches to understanding health, illness and healthcare and how social, cultural, political and economic factors affect our health, our experiences with illness, and our encounters with healthcare systems.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2060 [0.5 credit]**Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives**

Drawing on anthropological and sociological approaches, students will explore girls' lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence.

Also listed as ANTH 2060.

Prerequisite(s): second year standing or permission of the instructor.

Two hour lecture plus one hour tutorial per week.

SOCI 2080 [0.5 credit]**Humans/Animals: the More-than-Human in Social Research**

Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the 'more than human' in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene.

Also listed as ANTH 2080.

Lecture/discussion groups three hours per week.

SOCI 2150 [0.5 credit]**Social Psychology**

Theoretical and empirical consideration of society and the individual. Topics include the public realm, situations, roles and interpersonal relations. Beliefs, attitudes, interests and opinions, leadership and decision making, conformity, coercion and compromise may be also examined.

Precludes additional credit for PSYC 2100.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2160 [0.5 credit]**War and Society**

Sociological theory and research on large-scale conflict.

How society and culture shape warfare through processes of socialization, bureaucratization, and ideological representation. Social impacts of war in terms of gender, race and ethnicity, class relations, and cultural values.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2170 [0.5 credit]**Foundations in Social Justice**

Introduction to the study of social justice and the theorization of social justice sociology. Critical examination of resistance to oppression, social movements and solidarity both in Canada and transnationally. Exploration of the relationship between the university and community-based action.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2180 [0.5 credit]**Foundations in Community Engagement**

Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.

Includes: Experiential Learning Activity

Also listed as ANTH 2180.

Prerequisite(s): Second year standing or permission of instructor.

Lecture, discussion and project work three hours a week.

SOCI 2445 [0.5 credit]**Sociology of Deviance**

The construction of deviant behaviour and the consequences of such construction for both deviant and conforming persons. Emphasis upon deviance as a normal and necessary result of the socio-cultural processes resulting from, and affecting the activities of a viable society.

Precludes additional credit for SOCI 2505 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2450 [0.5 credit]**Crime and Society**

Social reactions to crime, criminalization processes, and the criminal justice system, and their intersection with power relations and social inequalities.

Precludes additional credit for SOCI 2701.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2702 [0.5 credit]**Power and Social Change**

An investigation of power and culture, with a focus on how ordinary people contribute to social change. Topics may include activism, leisure, consumption, identity, fashion, sexuality, tourism, health, pollution and work.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2705 [0.5 credit]**Popular Culture in the Digital Age**

An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.

Also listed as DIGH 2705.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2810 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2820 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2910 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information.

SOCI 2920 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information.

SOCI 3000 [0.5 credit]**Descriptive Statistics in Social Research**

The conceptual foundations of descriptive statistics and applications of these statistics using software (SPSS or Stata) to analyze and interpret social science data. Topics include frequency distributions, graphs, measures of central tendency and dispersion, measures of association, bivariate regression, and introduction to multivariate statistics.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 2002 (no longer offered).

Prerequisite(s): SOCI 2000 and third-year standing.

Lectures/computer labs three hours a week.

SOCI 3002 [0.5 credit]**Inferential Statistics in Social Research**

Inferential statistics and hypotheses testing used in social science research. Topics may include relationship between samples and population, methods of sample selection, central limit theorem, confidence levels and confidence intervals, overview of selected hypothesis tests, multivariate data analysis and multiple regression analysis.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 3003 (no longer offered).

Prerequisite(s): SOCI 3000 or CRCJ 3001 and third-year standing.

Lectures/computer labs three hours a week.

SOCI 3004 [0.5 credit]**Qualitative Research: Approaches and Strategies**

Specialized examination of select strategies or approaches to qualitative research. Topics may include: advanced application of research design involving human participants; historical research methods; textual/document-based research; visual sociologies; critical methodologies (such as feminist or decolonizing methods). Includes: Experiential Learning Activity
Prerequisite(s): SOCI 2001 and third-year standing.
Lectures/computer labs three hours per week.

SOCI 3006 [0.5 credit]**Thinking the Social: Theories and Approaches**

Examination of a select sociological tradition or thinker, or theoretically intensive study of a sociological area. Consult the department for topics offered.
Precludes additional credit for SOCI 3005 (no longer offered), SOCI 4006 (no longer offered).
Prerequisite(s): SOCI 2005 and third-year standing.
Lectures/discussion groups three hours a week.

SOCI 3010 [0.5 credit]**Power, Oppression and Resistance**

What makes inequalities so persistent? Theoretical and empirical examination of the intersection of social inequalities in Canada and globally, including class, gender, race and ethnicity and age; study of resistance to structures and cultures of inequalities.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3019 [0.5 credit]**Sociology of International Migration**

This course draws from global and interdisciplinary theoretical perspectives to examine primarily though not exclusively Canadian immigration policy and the socio-historical forces shaping policy, migration patterns, permanent, temporary and circular migration, the experiences of immigrants, refugees and migrants; and diasporic and transnational communities and identities.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours per week.

SOCI 3020 [0.5 credit]**Studies in Race and Ethnicity**

Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity, which intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, international migration, citizenship, and diasporic cultures. Also listed as ANTH 3020.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3027 [0.5 credit]**Globalization and Human Rights**

Examination of the various dimensions and meanings of globalization and its relationship with human rights, with emphasis on the implications of the emerging global economy for economic, social, political and cultural rights. Also listed as ANTH 3027, PSCI 3802.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3030 [0.5 credit]**Studies in Work, Industry and Occupations: Authority and Expertise**

The nature and place of expert knowledge in societies. The development of the practices and organization of the professions and their relation to social stratification, the state, patriarchy and gender; the systematic development of knowledge in societies.
Includes: Experiential Learning Activity
Precludes additional credit for SOCI 2508 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3035 [0.5 credit]**Science, Culture and Society: Social Studies of Science**

Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.
Also listed as ANTH 3035.
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3038 [0.5 credit]**Studies in Urban Sociology**

Issues related to people and the urban environment, including the historical process of urbanization, rural-urban transition, the diffusion of urban values and life styles, contemporary urban problems such as urban renewal, pollution and the pressures of the urban environment on social institutions.
Precludes additional credit for SOCI 2504 (no longer offered).
Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.
Lecture three hours a week.

SOCI 3040 [0.5 credit]**Studies in the Sociology of Gender**

Sociological and feminist perspectives; applied understandings of gender, gender relations; women's and men's lives in contemporary Canadian society and in historical and cross-cultural terms. Multiple intersections between gender, race, ethnicity, class and sexuality. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3044 [0.5 credit]**Sociology of Sex and Sexuality**

Key concepts of sex, sexuality, gender, eroticism and pleasure. The history of sex and sexuality. The regulation of sexual relations and practices. Social movements relating to sexuality, gender identities and sexual equality. Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3045 [0.5 credit]**Children and Childhood in a Globalized World**

A socio-historical and cross-cultural exploration of constructions, deconstructions, and the experience of childhood in Canada and internationally. Compulsory schooling, child labour, protection and regulation in law, the commodification and equalization of childhood, children's social movements, and the emergence of children's rights discourses.

Also listed as ANTH 3045.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3050 [0.5 credit]**Studies in the Sociology of Health**

Current theory and research on health, disease and social responses to health issues. Topics include population differences incidence and prevalence of morbidity and mortality, access to care and government health policy. Focus upon cultural definitions of health and their consequences for health promotion practices.

Precludes additional credit for SOCI 3705.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3055 [0.5 credit]**Studies in Addictions**

Survey of alcohol and other drug use in cross-cultural and sub-group perspectives. Relationships between culture, social structure and patterns of use of psychoactive substances. Topics may include: substance use and the life cycle; gender and psychoactive substances; problem and non-problem use.

Precludes additional credit for SOCI 3001.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3056 [0.5 credit]**Women and Health**

Women's health issues and how they relate to social, political and economic factors. The intersection of gender, ethnicity, class, sexual orientation and able-bodiedness with women's health.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Seminar 3 hours per week.

SOCI 3060 [0.5 credit]**Critical Disability Studies**

Course engages contemporary disability theory, culture, and activism to consider bodily difference and its relation to the workings of power and social control, accessibility, normalization, ableism, and medicalization. Students will gain an understanding of the contemporary debates, theories, and methodologies of critical disability studies. Also listed as DBST 3060.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lectures three hours a week.

SOCI 3150 [0.5 credit]**Sociology of Rightwing Populism**

This course will make sense of Trumpism and other rightwing populisms by interrogating their sociological backgrounds and histories. Students will learn to recognize the systems and structures that make populist leaders possible, and how trends in North America relate to far-right movements elsewhere.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3160 [0.5 credit]**Political Violence**

Sociological examination of political violence. Theoretical analysis of violence as social action that is historically situated and shaped by cultural and economic forces; the relationship between political violence and identity, nation/nationalism, modernity and globalisation.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third year standing.

Lectures three hours a week.

SOCI 3170 [0.5 credit]**Social Justice in Action**

Current debates in social justice theory and practice. The course includes substantial engagement with community actors, including activists and advocates as guest speakers. Students will be exposed to social justice principles applied in the community through a variety of approaches.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3210 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3220 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3300 [0.5 credit]**Studies in the Sociology of Education**

Critical analysis of selected work in educational sociology. Topics may include sociological theories of education, school ethnography, contemporary educational policy and practice. Note: Topic will vary in keeping with the interests of students and instructor.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3410 [0.5 credit]**Studies in Criminal Justice**

Developments in criminal justice are examined in the context of broader social issues. Particular emphasis will be placed on contemporary developments in criminal justice institutions, programs and practices.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 3808 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3420 [0.5 credit]**Studies in Gender and Criminal Justice**

An overview of current issues related to women as both perpetrators and victims of crime and the Canadian criminal justice system's response to them. Topics may include woman abuse, sexual assault, and federally sentenced women.

Precludes additional credit for SOCI 3201 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3430 [0.5 credit]**Studies in Collective Action and Social Movements**

What is a social movement? How do sociologists distinguish between social movements and revolutions? What factors influence social movement development? What do they look like? Theoretical and empirical study of the relationship between social movements and social change.

Precludes additional credit for SOCI 3408 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3450 [0.5 credit]**Studies in Law Enforcement**

A comparative examination of contemporary law enforcement. Topics may include public versus private policing, centralized versus decentralized policing, and transnational policing.

Precludes additional credit for SOCI 3507 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3480 [0.5 credit]**Law and Social Regulation**

A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict.

Also listed as LAWS 3106.

Precludes additional credit for SOCI 3801 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3570 [0.5 credit]**Studies in Art, Culture and Society**

Aesthetic practices and institutions. Production and reception of diverse art forms (visual, musical, corporeal, etc.) in various sociocultural contexts. Institutions dedicated to supporting such practices (e.g., museums, theatres, festivals, rituals) are examined through a range of theoretical perspectives.

Also listed as ANTH 3570.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3710 [0.5 credit]**Introduction to Cultural Studies**

Research and theory in the interdisciplinary area of Cultural Studies. Contemporary cultural change in the advanced industrialized societies and its impact on everyday life.

Includes: Experiential Learning Activity

Precludes additional credit for ANTH 3710.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3805 [0.5 credit]**Studies in Population**

Historical and current debates on population growth. Historical declines in fertility and mortality from an international perspective. Contemporary demographic issues such as low fertility, longevity revolution, population aging, inequalities in health, migration and refugees.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3910 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information, as departmental permission is required.

SOCI 3920 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information, as departmental permission is required.

SOCI 3950 [0.5 credit]**Practicum Placement in Sociology**

This course provides students with the opportunity to apply academic skills and knowledge while working within a sociology-related organization. Placements are organized with support from a co-ordinator.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Sociology with a GPA of 9.00 or higher and permission of the course instructor.

Placement six to eight hours a week.

SOCI 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

SOCI 4002 [0.5 credit]**Advanced Studies in Sociological Theory**

Close study of the works of an author, tendency, or school of thought in theoretical sociology. Topic will vary in keeping with interests of the students and instructor.

Prerequisite(s): SOCI 3006 and fourth-year standing.

Seminar three hours a week.

SOCI 4003 [0.5 credit]**Advanced Studies in Qualitative Research**

In-depth study into selected issues in qualitative research design, implementation and data analysis. Topics covered may include participant observation, ethnomethodology, ethnography, grounded theory, discourse analysis, narrative analysis, textual analysis, and document analysis. Intersections between epistemologies and methodologies.

Precludes additional credit for ANTH 4003.

Prerequisite(s): SOCI 3004 and fourth-year standing.

Seminar three hours a week.

SOCI 4009 [0.5 credit]**Advanced Studies in Quantitative Research**

Study of specific quantitative methodological issues. Focus may be on one or two of the following topics: quantitative research design, sampling techniques, survey research methods and various statistical research methods including OLS and logistic regression.

Precludes additional credit for SOCI 4840 (no longer offered).

Prerequisite(s): SOCI 3002 and fourth-year standing.

Seminar/lab three hours a week.

SOCI 4020 [0.5 credit]**Advanced Studies in Race and Ethnicity**

Selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors' research interests.

Also listed as ANTH 4020.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4039 [0.5 credit]**Women in Contemporary Middle East Societies**

Socio-economic, political and cultural realities of Middle Eastern women with focus on their lived experiences, voices and stories. Focus on women in Palestine/Israel with consideration of other Middle Eastern women.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4040 [0.5 credit]**Feminist Sociology of Intersectionality**

Theoretical and empirical examination of gender relations and gendered inequality with emphasis on the complex intersection of gender with race, ethnicity, religion, class, sexuality, (dis)ability and other relations of power in feminist scholarship, social justice movements, law and policy.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4043 [0.5 credit]**Families in the 21st Century**

Examination of contemporary family forms including single-parent-, blended/step-, LGBTQ- and common-law families. Topics may include theoretical perspectives; reproductive technologies; globalization; migration; interracial families; cohabitation; separation/divorce; motherhood/fatherhood; childcare/domestic labour; children/youth; intergenerational relations; social class/poverty; family policies and family law.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4160 [0.5 credit]**War, Terrorism and State Terrorism**

Critical theoretical and empirical analysis of violent political conflict. Examination of transformations and continuities of war, terrorism and state terrorism; modalities of political violence, such as torture or disappearance; responses to violent conflict; and the representation and construction of political violence.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4170 [0.5 credit]**Community-Engaged Sociology**

Students will apply their sociological education working with community organizations in small teams to research issues and advocate for positive social change. Each team's project will include public education, sociological analysis and creating a tangible product for the partner organization.

Includes: Experiential Learning Activity

Prerequisite(s): third-year or fourth-year standing, or permission from the instructor of SOCI 4170.

Lectures, discussion and project work three hours a week.

SOCI 4171 [0.5 credit]**Community Engagement Capstone**

Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners.

Includes: Experiential Learning Activity

Also listed as ANTH 4171.

Prerequisite(s): SOCI 2180 and fourth year standing or permission of the instructor.

Lecture, discussion and project work three hours a week.

SOCI 4200 [0.5 credit]**War, Security and Citizenship**

Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of abject and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements.

Also listed as ANTH 4200.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4410 [0.5 credit]**Advanced Studies in Criminology**

Crime, criminal justice, social processes relating to the implementation of criminal justice policy, or other aspects of criminality and deviance.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4480 [0.5 credit]**Advanced Studies in the Sociology of Law**

Contemporary debates about the role of law in society focusing on the potential and limits of law as a vehicle of social transformation.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4700 [0.5 credit]**Honours Capstone Seminar**

Students carry out a small-scale research project to hone transferable skills acquired over the course of the degree programme.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4702 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced.

Also listed as LAWS 4702, SOWK 4702.

Prerequisite(s): fourth-year standing.

Seminars three hours a week.

SOCI 4730 [0.5 credit]**Colonialism and Post-Colonialism**

Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.

Also listed as ANTH 4730.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4750 [0.5 credit]**Advanced Studies in Globalization and Citizenship**

Selected topics on the confluence of processes of globalization, development and citizenship; examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.

Also listed as ANTH 4750.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4810 [0.5 credit]**Advanced Studies in Social Policy**

An examination of sociological research and social intervention.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4850 [0.5 credit]**Contemporary Problems in Sociology**

Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4860 [0.5 credit]**Contemporary Problems in Sociology**

Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4900 [1.0 credit]**Honours Thesis**

An independent research project under the supervision of a faculty member. Seminar supports students through each stage of the research process: development of a research question, designing the project, crafting a proposal, carrying out data generation and analysis, and writing the final thesis.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Sociology B.A. Honours with a CGPA of 9.00 or higher in the Major or by permission of the instructor. Students are strongly encouraged to locate a faculty member to supervise their Honours Thesis prior to the start of this course.

Seminars on a bi-weekly basis (three hours).

SOCI 4910 [0.5 credit]**Tutorial in Sociology**

Consult the Department for information.

SOCI 4920 [0.5 credit]**Tutorial in Sociology**

Consult the Department for information.

Spanish (Minor)

This section presents the requirements for programs in:

- Minor in Spanish

Minor in Spanish (4.0 credits)

Open to all undergraduate degree students.

Requirements:

- | | |
|---|-----|
| 1. 3.0 credits in SPAN | 3.0 |
| 2. 1.0 credit in SPAN at the 3000-level or higher | 1.0 |
| 3. Subject to approval of the School, a maximum of 2.0 credits may be substituted for the above by taking courses at the 2000-level or higher in another discipline relevant to the language. | |
| 4. The remaining requirements of the major discipline(s) and degree must be satisfied. | |

Total Credits **4.0**

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Spanish (SPAN) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

SPAN 1010 [0.5 credit]

First-Year Spanish I

For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for SPAN 1110. Four hours a week.

SPAN 1020 [0.5 credit]

First-Year Spanish II

Continuation of first-year Spanish. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for SPAN 1110. Prerequisite(s): grade of C or higher in SPAN 1010, or permission of the School. Four hours a week.

SPAN 1110 [1.0 credit]

Intensive First-Year Spanish

For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for SPAN 1010 or SPAN 1020. Eight hours a week (one term).

SPAN 2010 [0.5 credit]

Second-Year Spanish I

Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for SPAN 2110. Prerequisite(s): grade of C or higher in SPAN 1020, SPAN 1110, or permission of the School. Four hours a week.

SPAN 2020 [0.5 credit]

Second-Year Spanish II

Continuation of second-year Spanish. Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for SPAN 2110. Prerequisite(s): grade of C or higher in SPAN 2010, or permission of the School. Four hours a week.

SPAN 2110 [1.0 credit]

Intensive Second-Year Spanish

Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Precludes additional credit for SPAN 2010, SPAN 2020. Prerequisite(s): grade of C or higher in SPAN 1020, SPAN 1110, or permission of the School. Eight hours a week (one term).

SPAN 3010 [0.5 credit]

Third-Year Spanish I

Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Precludes additional credit for SPAN 3110. Prerequisite(s): grade of C or higher in SPAN 2020, SPAN 2110, or permission of the School. Three hours a week.

SPAN 3020 [0.5 credit]

Third-Year Spanish II

Continuation of third-year Spanish. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Precludes additional credit for SPAN 3110. Prerequisite(s): grade of C or higher in SPAN 3010 or SPAN 3015, or permission of the School. Three hours a week.

SPAN 3110 [1.0 credit]

Intensive Third-Year Spanish

Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Precludes additional credit for SPAN 3010, SPAN 3020. Prerequisite(s): grade of C or higher in SPAN 2020, SPAN 2110, or permission of the School. Six hours a week (one term).

SPAN 3220 [0.5 credit]**Introduction to Spanish Linguistics**

Introduction to principles of linguistic analysis, illustrated through Spanish. Sound systems, word structures and sentence structures of Spanish. Basic principles of language variation and change, as evidenced in the development of Spanish. Linguistic aspects of bilingualism as manifested in Spanish/English bilinguals.

Prerequisite(s): SPAN 3020 or SPAN 3110 or permission of the School.

Three hours a week.

SPAN 4010 [0.5 credit]**Fourth-Year Spanish I**

Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study.

Compulsory attendance.

Precludes additional credit for SPAN 4110.

Prerequisite(s): grade of C or higher in SPAN 3020, SPAN 3110, or permission of the School.

Three hours a week.

SPAN 4015 [0.5 credit]**Spanish for Heritage Speakers I**

For students who have attained Spanish language proficiency in informal settings. This course formalizes grammar awareness, enhances literacy skills, and develops existing language abilities in a formal academic setting.

Precludes additional credit for all SPAN courses numbered 4110 and below.

Prerequisite(s): permission of the School.

Online.

SPAN 4020 [0.5 credit]**Fourth-Year Spanish II**

Continuation of fourth-year Spanish. Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Precludes additional credit for SPAN 4110.

Prerequisite(s): grade of C or higher in SPAN 4010, or permission of the School.

Three hours a week.

SPAN 4025 [0.5 credit]**Spanish for Heritage Speakers II**

For students who have started to develop existing Spanish language abilities in a formal academic setting. This course enhances students' written expression while building on advanced knowledge of Spanish grammar and vocabulary.

Precludes additional credit for all SPAN courses numbered 4110 and below.

Prerequisite(s): SPAN 4015 or permission of the School.

Online.

SPAN 4110 [1.0 credit]**Intensive Fourth-Year Spanish**

Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study.

Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for SPAN 4010 or SPAN 4020.

Prerequisite(s): grade of C or higher in SPAN 3020, SPAN 3110, or permission of the School.

Six hours a week (one term).

SPAN 4215 [0.5 credit]**Spanish for Specific Purposes**

Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.

Three hours a week.

SPAN 4320 [0.5 credit]**Topics in Spanish Linguistics**

Selected topic in Spanish linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001 or SPAN 3220, and grade of C or higher in SPAN 4020 or 4110, or permission of the School.

Three hours a week.

SPAN 4380 [0.5 credit]**Topics in Spanish-speaking Cultures**

Selected topics in Spanish-speaking cultures and societies. Development of advanced language skills.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.

Three hours per week.

SPAN 4900 [1.0 credit]**Independent Study**

Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

SPAN 4901 [0.5 credit]**Independent Study**

Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

Technology, Society, Environment Studies (Minor)

This section presents the requirements for programs in:

- Minor in Technology, Society, Environment Studies (TSE)

Program Requirements

Minor in Technology, Society, Environment Studies (TSE) (4.0 credits)

This minor is available to all undergraduate degree students.

Requirements

1. 1.0 credit in:		1.0
ENSC 2001 [0.5]	Earth Resources and Natural Hazards: Environmental Impacts	
ISCI 2002 [0.5]	Human Impacts on the Environment	
2. 1.0 credit in:		1.0
TSES 3001 [0.5]	Technology-Society Interactions	
TSES 3002 [0.5]	Energy and Sustainability	
3. 1.0 credit from:		1.0
ISCI 1001 [0.5]	Introduction to the Environment	
& ISCI 2000 [0.5]	Natural Laws	
TSES 2305 [1.0]	Ancient Science and Technology	
CLCV 2305 [1.0]	Ancient Science and Technology	
4. 1.0 credit from:		1.0
TSES 4001 [0.5]	Technology and Society: Risk	
TSES 4002 [0.5]	Technology and Society: Forecasting	
TSES 4003 [0.5]	Technology and Society: Innovation	
TSES 4005 [0.5]	Information Technology and Society	
TSES 4006 [0.5]	Technology and Society: Work	
TSES 4007 [0.5]	Product Life Cycle Analysis	
TSES 4008 [0.5]	Environmentally Harmonious Lifestyles	
TSES 4009 [0.5]	Special Topics	
TSES 4010 [0.5]	Special Topics	
TSES 4011 [0.5]	Technology and Society: Development	
TSES 4012 [0.5]	Science and Fiction: Creating Tomorrow	
TSES 4014 [0.5]	Technology-Society: Time	
5. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Note: This Minor is designed for all degree students. There are no requirements for OAC Science credits or University level credits in Natural Sciences. Students with one or more OAC and/or university credits in science can replace ISCI 1001 and ISCI 2000 with TSES 2305, and/or additional half-credit 4000-level TSE courses. Students who have taken courses equivalent to ENSC 2001 and/or ISCI 2002 can also replace all or part of requirement 1 with 4000-level TSE courses. Any substitution requires permission of the Chair of TSE.

Regulations

In addition to the requirements listed here, students must satisfy:

1. the University regulations including the process of Academic Continuation Evaluation (see the Academic Regulations of the University section of this Calendar).

Technology, Society, Environment (TSES) Courses

TSES 2006 [0.5 credit]

Ecology and Culture

Cultural adaptations to the environment are set within globalization processes. New symbolic, historical and political ecologies arise out of the hubris of classical models. The advocacy role of applied ecological anthropology and the consequences of Western cultures' adaptive capacities will be examined.

Prerequisite(s): second year standing or equivalent.

Lectures three hours a week.

TSES 2305 [1.0 credit]

Ancient Science and Technology

Development of science and technology in the ancient world and their practical application. The craftsman and artisan in society; the attitude of intellectuals to science and manual labour. Effects of the institution of slavery. Suitable for students with no previous knowledge of Greece or Rome.

Also listed as CLCV 2305.

Prerequisite(s): second-year standing or equivalent.

Lectures two hours a week.

TSES 3001 [0.5 credit]

Technology-Society Interactions

Ethical issues in introducing technology; historical review of technology and human development; effects on society of medical and communications technologies; automation and its effects on society, especially work; impact of technology on international affairs, especially through multinational enterprises. Guest lectures.

Includes: Experiential Learning Activity

Precludes additional credit for TSES 3000 and TSES 3500.

Prerequisite(s): at least second-year standing.

Lectures and workshops three hours per week.

TSES 3002 [0.5 credit]

Energy and Sustainability

History of energy use by humans; utilization of renewable energy sources; energy and agriculture; energy and mineral resources; options for electricity generation; nuclear energy; risks of accidents in large systems, e.g. nuclear plants, hydroelectric dams. Guest lectures.

Includes: Experiential Learning Activity

Precludes additional credit for TSES 3000 and TSES 3500.

Prerequisite(s): at least second-year standing.

Lectures and workshops three hours per week.

TSES 3500 [0.5 credit]**Interactions in Industrial Society**

Ethical issues involving technology; effects on society of automation, medical and communications technologies; technology and international affairs; energy use by humans; renewable energy sources; energy in agriculture and mineral extraction; electricity generation; nuclear energy; accidents in large systems, e.g. nuclear plants and hydroelectric dams.

Precludes additional credit for TSES 3001, TSES 3002 and TSES 3000.

Prerequisite(s): at least second-year standing.

Lectures three hours per week for both terms.

TSES 4001 [0.5 credit]**Technology and Society: Risk**

Examines the complex practice of evaluating technology's impact on society and the environment; risk analysis; cost-benefit analysis; technology regulation; retrospective project assessment; necessary aspects of assessment and assessment examples. Guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4002 [0.5 credit]**Technology and Society: Forecasting**

Methods used for forecasting technological and social change; technological and social change portrayed in literature; science fiction factors involved in such change. Guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4003 [0.5 credit]**Technology and Society: Innovation**

Technological and social innovation, especially in Canada: historical examples; the relation of innovation to economic development; analysis of the steps involved; effect on employment; impediments and incentives. Guest lecturers.

Prerequisite(s): third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4005 [0.5 credit]**Information Technology and Society**

Investigation of the human and social impacts of electronic information and communication on our working, educational, and personal lives from various disciplinary perspectives; problem issues and competing values in the creation, manipulation, dissemination, and control of information are identified; resolution initiatives encouraged. Guest lecturers.

Prerequisite(s): third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4006 [0.5 credit]**Technology and Society: Work**

Explores the relationship between technology, employment and the individual; work organizations; employment restructuring; rural/urban split; the impact of information technologies; demographic impacts and globalization; Canadian issues and public policy explored. Guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4007 [0.5 credit]**Product Life Cycle Analysis**

Life cycle analysis of products and processes, from resource extraction through design and use to waste management or recycling; social and environmental implications of product design and use; how we value material objects and the environment; consumerism; evolution of design. Guest lectures.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4008 [0.5 credit]**Environmentally Harmonious Lifestyles**

Brief history of humans as part of the ecosystem; religious and ethical views; current degree of ecosystem disturbance by industrial society; innovations in products and services furthering the sustainability of the ecosystem, emphasis on the Canadian context. Guest lecturers and a major project.

Prerequisite(s): third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4009 [0.5 credit]**Special Topics**

Reading course for students who wish to investigate a particular topic relevant to TSES.

Prerequisite(s): third-year standing or equivalent and permission of the Chair of TSE.

TSES 4010 [0.5 credit]**Special Topics**

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): third-year standing or equivalent.

Lectures three hours a week.

TSES 4011 [0.5 credit]**Technology and Society: Development**

Created in collaboration with Engineers Without Borders Carleton, the course explores appropriate ways of meeting technological needs of communities. Uses Canadian and African case studies to examine how capacity building has a greater impact than simple delivery of technological goods.

Prerequisite(s): third-year standing or equivalent.

Lectures three hours a week.

TSES 4012 [0.5 credit]

Science and Fiction: Creating Tomorrow

Scenarios are used to speculate about the planned future. Science fiction and speculative fiction project ideas about imagined futures. Using readings from scenarios, speculative fiction and science fiction the course explores the mutual shaping of fiction, science and technology. Prerequisite(s): third-year standing or equivalent.

TSES 4014 [0.5 credit]

Technology-Society: Time

Time is a universal human experience, but it presents some profound mysteries. It governs our behaviour on personal, societal and cultural levels. This course will bring together experts from physics, sociology, philosophy, biology, literature and psychology to illuminate our understanding.

Prerequisite(s): third-year standing or equivalent. Lectures three hours a week.

Undeclared

Undeclared Program

Bachelor of Arts (Honours), Bachelor of Science (Honours)

Students can find it difficult to decide which thematic or discipline-specific program they want to take for their academic studies. The Undeclared program typically enables students to begin their studies with a broad set of topics to help them narrow their focus and transition into a thematic or discipline-specific program. The recommended course patterns for students are outlined below. Students are expected to apply to enter a thematic or discipline-specific program upon or before completing 3.5 credits, and can meet with an academic advisor at the Academic Advising Centre who will offer support in making this decision.

First-year Course Selection for B.A. (Honours) Undeclared Students

To give themselves the greatest range of choices and transition to a more specific program, Undeclared B.A. students should consider the following guidelines in selecting their initial courses.

Undeclared B.A. students should register in:

1. A B.A. First-year seminar (FYSM);
2. Courses in at least three different disciplines leading to programs within the Faculty of Arts and Social Sciences or the Faculty of Public Affairs.

First-year Course Selection for B.Sc. (Honours) Undeclared Students

To give themselves the greatest range of choices and transition to a more specific program, Undeclared B.Sc. students should conform to the following guidelines in selecting their initial courses. Some Science majors have specific math prerequisites which may differ from those listed below. Students must contact sciundecadvising@carleton.ca for support in course selection and major selection.

Undeclared B.Sc. students should register in:

1. 2.0 credits in Experimental Science	2.0
2. 1.0 credit in Mathematics	1.0
3. 1.0 credit in Mathematics, Experimental Science or Computer Science	1.0
4. 1.0 credit chosen from:	1.0
NSCI 1000 [0.5] Seminar in Science	
and/or approved courses outside the faculties of Science and Engineering and Design	
Total Credits	5.0

Course Categories

Experimental Science Courses

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I
PHYS 1008 [0.5]	Elementary University Physics II

Appropriate Mathematics Courses

Calculus

MATH 1007 [0.5]	Elementary Calculus I
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Algebra

MATH 1107 [0.5]	Linear Algebra I
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Statistics

STAT 2507 [0.5]	Introduction to Statistical Modeling I
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Appropriate Computer Science Courses

COMP 1005 [0.5]	Introduction to Computer Science I
COMP 1006 [0.5]	Introduction to Computer Science II

Approved Courses Outside the Faculties of Science and Engineering and Design

Approved courses outside the faculties of Science and Engineering and Design are specified in the *Academic Regulations for the Bachelor of Science Degree* section of this Calendar.

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult

the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies
- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS,

INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student

be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

B.Sc. Regulations

The regulations presented in this section apply to all Bachelor of Science programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (see the *Academic Regulations of the University* section of this Calendar).

Breadth Requirement for the B.Sc.

Students in a Bachelor of Science program must present the following credits at graduation:

1. 2.0 credits in Science Continuation courses not in the major discipline; **students completing a double major are considered to have completed this requirement providing they have 2.0 credits in**

Science Continuation courses in each of the two majors;

2. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000)

In most cases, the requirements for individual B.Sc. programs, as stated in this Calendar, contain these requirements, explicitly or implicitly.

Students admitted to B.Sc. programs by transfer from another institution must present at graduation (whether taken at Carleton or elsewhere):

1. 2.0 credits in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received fewer than 10.0 transfer credits; or,
2. 1.0 credit in courses outside of the faculties of Science and Engineering and Design (may include NSCI 1000) if the student received 10.0 or more transfer credits.

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program within the B.Sc. Degree

To transfer to a program within the B.Sc. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.10 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.Sc. degree must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrolment limitations, and/or specific program, program element or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is meeting the minimum CGPAs described in Section 3.1.9 of the *Academic Regulations of the University*, as well as being subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry.

Experimental Science Requirement

Students in a B.Sc. degree program must present at graduation at least two full credits of Experimental Science chosen from two different departments or institutes from the list below:

Approved Experimental Science Courses

Biochemistry

BIOC 2200 [0.5]	Cellular Biochemistry
BIOC 4001 [0.5]	Methods in Biochemistry
BIOC 4201 [0.5]	Advanced Cell Culture and Tissue Engineering

Biology

BIOL 1103 [0.5]	Foundations of Biology I
BIOL 1104 [0.5]	Foundations of Biology II
BIOL 2001 [0.5]	Animals: Form and Function
BIOL 2002 [0.5]	Plants: Form and Function
BIOL 2104 [0.5]	Introductory Genetics
BIOL 2200 [0.5]	Cellular Biochemistry
BIOL 2600 [0.5]	Ecology

Chemistry

CHEM 1001 [0.5]	General Chemistry I
CHEM 1002 [0.5]	General Chemistry II
CHEM 1005 [0.5]	Elementary Chemistry I
CHEM 1006 [0.5]	Elementary Chemistry II
CHEM 2103 [0.5]	Physical Chemistry I
CHEM 2203 [0.5]	Organic Chemistry I
CHEM 2204 [0.5]	Organic Chemistry II
CHEM 2302 [0.5]	Analytical Chemistry I
CHEM 2303 [0.5]	Analytical Chemistry II
CHEM 2800 [0.5]	Foundations for Environmental Chemistry

Earth Sciences

ERTH 1006 [0.5]	Exploring Planet Earth
ERTH 1009 [0.5]	The Earth System Through Time
ERTH 2102 [0.5]	Mineralogy to Petrology
ERTH 2404 [0.5]	Engineering Geoscience
ERTH 2802 [0.5]	Field Geology I
ERTH 3111 [0.5]	Vertebrate Evolution: Mammals, Reptiles, and Birds
ERTH 3112 [0.5]	Vertebrate Evolution: Fish and Amphibians
ERTH 3204 [0.5]	Mineral Deposits
ERTH 3205 [0.5]	Physical Hydrogeology
ERTH 3806 [0.5]	Structural Geology

Food Sciences

FOOD 3001 [0.5]	Food Chemistry
FOOD 3002 [0.5]	Food Analysis
FOOD 3005 [0.5]	Food Microbiology

Geography

GEOG 1010 [0.5]	Global Environmental Systems
GEOG 3108 [0.5]	Soil Properties

Neuroscience

NEUR 3206 [0.5]	Sensory and Motor Neuroscience
NEUR 3207 [0.5]	Systems Neuroscience
NEUR 4600 [0.5]	Advanced Lab in Neuroanatomy

Physics

PHYS 1001 [0.5]	Foundations of Physics I
PHYS 1002 [0.5]	Foundations of Physics II
PHYS 1003 [0.5]	Introductory Mechanics and Thermodynamics
PHYS 1004 [0.5]	Introductory Electromagnetism and Wave Motion
PHYS 1007 [0.5]	Elementary University Physics I

PHYS 1008 [0.5]	Elementary University Physics II
PHYS 2202 [0.5]	Wave Motion and Optics
PHYS 2604 [0.5]	Modern Physics I
PHYS 3007 [0.5]	Third Year Physics Laboratory: Selected Experiments and Seminars
PHYS 3606 [0.5]	Modern Physics II
PHYS 3608 [0.5]	Modern Applied Physics

Women's and Gender Studies

This section presents the requirements for programs in:

- Women's and Gender Studies B.A. Honours
- Women's and Gender Studies B.A. Combined Honours
- Women's and Gender Studies B.A.
- Specialization in Global Genders and Sexualities B.G.In.S. Honours
- Stream in Global Genders and Sexualities B.G.In.S.
- Minor in Women's and Gender Studies

Program Requirements

Women's and Gender Studies

B.A. Honours (20.0 credits)

Students must successfully complete at least 0.5 credit in each of the four areas (CRST, DBST, SXST, WGST) to fulfill the program requirements for the Women's and Gender Studies B.A. Honours.

A. Credits included in the Major CGPA (9.0 credits)

1. 1.0 credit from:		1.0
FYSM 1402 [1.0]	Issues in Women's and Gender Studies	
WGST 1808 [1.0]	Introduction to Feminist Social Transformation	
2. 0.5 credit in:		0.5
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice	
3. 0.5 credit from:		0.5
CRST 2001 [0.5]	Introduction to Critical Race Studies	
DBST 2001 [0.5]	Disabling Society	
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction	
4. 0.5 credit in:		0.5
WGST 3001 [0.5]	Theory and Research in Feminist Social Transformation	
5. 3.0 credits from WGST, SXST, DBST, or CRST at the 3000- or 4000-level		3.0
6. 1.0 credit from WGST, SXST, DBST, or CRST at the 4000-level		1.0
7. 2.5 credits from WGST, SXST, DBST, CRST or WGST Approved Electives		2.5
B. Credits not included in the Major CGPA (11.0 credits)		
8. 8.0 credits not in WGST		8.0
9. 3.0 credits in free electives		3.0
Total Credits		20.0

Women's and Gender Studies B.A. Combined Honours (20.0 credits)

Students must successfully complete at least 0.5 credit in each of the four areas (CRST, DBST, SXST, and WGST) to fulfill the program requirements for the Women's and Gender Studies B.A. Combined Honours.

A. Credits Included in the Women's and Gender Studies Major CGPA (7.0 credits)

1. 1.0 credit from:	1.0
FYSM 1402 [1.0] Issues in Women's and Gender Studies	
WGST 1808 [1.0] Introduction to Feminist Social Transformation	
2. 0.5 credit in:	0.5
WGST 2801 [0.5] Activism, Feminisms, and Social Justice	
3. 0.5 credit from:	0.5
CRST 2001 [0.5] Introduction to Critical Race Studies	
DBST 2001 [0.5] Disabling Society	
SXST 2101 [0.5] Sexuality Studies: A Critical Introduction	
4. 0.5 credit in:	0.5
WGST 3001 [0.5] Theory and Research in Feminist Social Transformation	
5. 1.5 credit from WGST, SXST, DBST or CRST at the 2000- or 3000-level	1.5
6. 2.0 credits from WGST, SXST, DBST, CRST or WGST-approved Electives at the 2000- or 3000-level	2.0
7. 0.5 credit from WGST, SXST, DBST, or CRST at the 4000-level	0.5
8. 0.5 credit from WGST, SXST, DBST, CRST or WGST-approved Electives at the 4000-level	0.5
B. Additional Requirements (13.0 credits)	13.0
9. The requirements for Combined Honours in the other discipline must be met	
10. Sufficient electives to make a total of 20.0 credits for the degree	
Total Credits	20.0

Women's and Gender Studies B.A. (15.0 credits)

Students must successfully complete at least 0.5 credit in each of the four areas (CRST, DBST, SXST, WGST) to fulfill the program requirements for the Women's and Gender Studies B.A.

A. Credits Included in the Major CGPA (6.0 credits)

1. 1.0 credit from:	1.0
FYSM 1402 [1.0] Issues in Women's and Gender Studies	
WGST 1808 [1.0] Introduction to Feminist Social Transformation	
2. 0.5 credit in:	0.5
WGST 2801 [0.5] Activism, Feminisms, and Social Justice	
3. 0.5 credit from:	0.5
CRST 2001 [0.5] Introduction to Critical Race Studies	
DBST 2001 [0.5] Disabling Society	

SXST 2101 [0.5] Sexuality Studies: A Critical Introduction	0.5
4. 0.5 credit in:	0.5
WGST 3001 [0.5] Theory and Research in Feminist Social Transformation	
5. 1.5 credit from WGST, SXST, DBST, CRST or WGST-approved Electives at the 3000-level	1.5
6. 2.0 credits from WGST, SXST, DBST, CRST, or WGST-approved Electives	2.0
B. Credits Not Included in the Major CGPA (9.0 credits)	
7. 6.0 credits in electives not in WGST	6.0
8. 3.0 credits in free electives	3.0
Total Credits	15.0

Specialization in Global Genders and Sexualities B.G.In.S. Honours (20.0 credits)

A. Credits Included in the Major CGPA (12.0 credits)

1. 4.5 credits in: Core Courses	4.5
GINS 1000 [0.5] Global History	
GINS 1010 [0.5] International Law and Politics	
GINS 1020 [0.5] Ethnography, Globalization and Culture	
GINS 2000 [0.5] Ethics and Globalization	
GINS 2010 [0.5] Globalization and International Economic Issues	
GINS 2020 [0.5] Global Literatures	
GINS 3010 [0.5] Global and International Theory	
GINS 3020 [0.5] Places, Boundaries, Movements and Global Environmental Change	
GINS 4090 [0.5] Honours Seminar in Global and International Studies	
2. 0.0 credit in: International Experience Requirement Preparation	
GINS 1300 [0.0] International Experience Requirement Preparation	
3. 7.5 credits in: The Specialization	
a. 1.5 credits in: Foundations	1.5
SXST 2101 [0.5] Sexuality Studies: A Critical Introduction	
WGST 1808 [1.0] Introduction to Feminist Social Transformation	
b. 2.0 credits from: Theorizing Bodies and Borders	2.0
CRST 2001 [0.5] Introduction to Critical Race Studies	
CRST 4001 [0.5] Advanced Critical Race Studies	
SXST 2102 [0.5] Sexuality, Gender, and Security	
SXST 3103 [0.5] Sexuality and Disability	
SXST 3104 [0.5] Transnational Sexualities	
SXST 3106 [0.5] Queer(ing) Archives	
WGST 2803 [0.5] Body Matters: The Politics of Bodies	
WGST 2811 [0.5] Masculinities	
WGST 3001 [0.5] Theory and Research in Feminist Social Transformation	
c. 2.5 credits from: Advocacy and Activism	2.5
HUMR 2202 [0.5] Power Relations and Human Rights	
HUMR 2301 [0.5] Human Rights and Sexualities	
HUMR 3202 [0.5] Human Rights and Resistance	

WGST 2801 [0.5]	Activism, Feminisms, and Social Justice	
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies	
WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies	
WGST 3803 [0.5]	Feminisms and Transnationalism	
WGST 3806 [0.5]	Girlhoods	
WGST 3807 [0.5]	Gendered Violence	
d. 1.5 credits from: Honours Seminars in Global Gender and Sexuality		1.5
HUMR 4302 [0.5]	Transgender Human Rights	
HUMR 4401 [0.5]	Gender, Citizenship and Social Justice in a Transnational World	
SXST 4101 [0.5]	Interdisciplinary Studies of Sexuality	
SXST 4103 [0.5]	Politics of Kink	
WGST 4812 [0.5]	Selected Topics in Women's and Gender Studies	

B. Credits Not Included in the Major CGPA (8.0 credits)		
4. 8.0 credits in: free electives		8.0
C. Additional Requirements		
5. The International Requirement must be met		
6. The Language Requirement must be met.		
Total Credits		20.0

Stream in Global Genders and Sexualities B.G.In.S. (15.0 credits)

A. Credits Included in the Major CGPA (8.0 credits)		
1. 4.0 credits in: Core Courses		4.0
GINS 1000 [0.5]	Global History	
GINS 1010 [0.5]	International Law and Politics	
GINS 1020 [0.5]	Ethnography, Globalization and Culture	
GINS 2000 [0.5]	Ethics and Globalization	
GINS 2010 [0.5]	Globalization and International Economic Issues	
GINS 2020 [0.5]	Global Literatures	
GINS 3010 [0.5]	Global and International Theory	
GINS 3020 [0.5]	Places, Boundaries, Movements and Global Environmental Change	
2. 4.0 credits from: the Stream		4.0
a. Foundations		
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction	
WGST 1808 [1.0]	Introduction to Feminist Social Transformation	
b. Theorizing Bodies and Borders		
CRST 2001 [0.5]	Introduction to Critical Race Studies	
CRST 4001 [0.5]	Advanced Critical Race Studies	
SXST 2102 [0.5]	Sexuality, Gender, and Security	
SXST 3103 [0.5]	Sexuality and Disability	
SXST 3104 [0.5]	Transnational Sexualities	
SXST 3106 [0.5]	Queer(ing) Archives	
WGST 2803 [0.5]	Body Matters: The Politics of Bodies	
WGST 2811 [0.5]	Masculinities	

WGST 3001 [0.5]	Theory and Research in Feminist Social Transformation	
c. Advocacy and Activism		
HUMR 2202 [0.5]	Power Relations and Human Rights	
HUMR 2301 [0.5]	Human Rights and Sexualities	
HUMR 3202 [0.5]	Human Rights and Resistance	
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice	
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies	
WGST 3803 [0.5]	Feminisms and Transnationalism	
WGST 3806 [0.5]	Girlhoods	
WGST 3807 [0.5]	Gendered Violence	
WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies	

B. Credits Not Included in the Major CGPA (7.0 credits)		
3. 7.0 credits in free electives		7.0
C. Additional Requirements		
4. The Language Requirement must be met.		
Total Credits		15.0

Minor in Women's and Gender Studies (4.0 credits)

The minor in Women's and Gender Studies is open to all undergraduate degree students not in Women's and Gender Studies programs.

Requirements:		
1. 1.0 credit from:		1.0
FYSM 1402 [1.0]	Issues in Women's and Gender Studies	
WGST 1808 [1.0]	Introduction to Feminist Social Transformation	
2. 0.5 credit in:		0.5
WGST 2801 [0.5]	Activism, Feminisms, and Social Justice	
3. 0.5 credit from:		0.5
CRST 2001 [0.5]	Introduction to Critical Race Studies	
DBST 2001 [0.5]	Disabling Society	
SXST 2101 [0.5]	Sexuality Studies: A Critical Introduction	
4. 1.0 credit from WGST-approved Electives at the 2000-level or above		1.0
5. 1.0 credit from WGST-approved Electives at the 3000-level or above		1.0
6. The remaining requirements of the major discipline(s) and degree must be satisfied.		
Total Credits		4.0

Women's and Gender Studies Approved Electives

The following course offerings are listed for the convenience of students. Detailed course descriptions will be found under the appropriate departmental course listings.

Note: Special Topics courses and other courses offered by units throughout the University may in any given year contain substantial material on gender and/or women's

experience. Recent examples include certain courses in art history, geography, history, journalism and sociology.

Women's and Gender Studies Approved Electives

Anthropology

ANTH 2040 [0.5] Anthropology and Gender

Art History

ARTH 4600 [0.5] Art, Architecture, and Gender

Communication and Media Studies

COMS 4604 [0.5] Media, Gender and Sexuality

Critical Race Studies

CRST 2001 [0.5] Introduction to Critical Race Studies

CRST 3812 [0.5] Interdisciplinary Topics in Critical Race Studies

CRST 4001 [0.5] Advanced Critical Race Studies

Disability Studies

DBST 2001 [0.5] Disabling Society

DBST 3001 [0.5] Disability Studies: Policy and Activism

DBST 3002 [0.5] Critical Mad Studies

DBST 3060 [0.5] Critical Disability Studies

DBST 3301 [0.5] Introduction to Deaf Studies

DBST 3304 [0.5] Disability and Childhood: Transnational Perspectives

DBST 3812 [0.5] Interdisciplinary Topics in Disability Studies

DBST 3900 [0.5] Independent Study

DBST 4812 [0.5] Interdisciplinary Topics in Disability Studies

Economics

ECON 3380 [0.5] The Economics of Gender and Ethnicity

English Language and Literature

ENGL 2108 [0.5] Women and Literature

ENGL 2109 [0.5] Gender, Sexuality and Literature

Film Studies

FILM 3301 [0.5] Topics in Cinema, Gender, and Sexuality

History

HIST 2506 [0.5] Introduction to Women's and Gender History

HIST 3106 [0.5] Social History of Sexuality

HIST 3406 [0.5] African-American Women

HIST 3505 [0.5] Women in Canada

HIST 3713 [0.5] Gender and Sexuality in Latin America

HIST 3717 [0.5] Gender and Sexuality in Africa

HIST 4505 [1.0] Seminar in Women's and Gender History

Human Rights

HUMR 2301 [0.5] Human Rights and Sexualities

HUMR 4401 [0.5] Gender, Citizenship and Social Justice in a Transnational World

Law

LAWS 3001 [0.5] Women and the Legal Process

LAWS 3503 [0.5] Equality and Discrimination

LAWS 3804 [0.5] Law of the Family

LAWS 4001 [0.5] Law, Family and Gender

LAWS 4002 [0.5] Feminist Theories of Law

Music

MUSI 3302 [0.5] Music and Gender I

MUSI 4303 [0.5] Music and Gender II

Philosophy

PHIL 2306 [0.5] Philosophy and Feminism

PHIL 2307 [0.5] Gender and Philosophy

PHIL 4005 [0.5] Seminar in Modern Philosophy

PHIL 4603 [0.5] Special Topic in Feminist Philosophy

PHIL 4604 [0.5] Special Topic in Feminist Philosophy

Political Science

PSCI 2500 [0.5] Gender and Politics

PSCI 3303 [0.5] Feminist Political Theory

PSCI 3502 [0.5] Gender and Politics: Global South

PSCI 4403 [0.5] Reproductive Rights Policy in North America

PSCI 4500 [0.5] Gender and Globalization

PSCI 4501 [0.5] Politics of Identity in Europe and the Russian Area

PSCI 4506 [0.5] Women and Politics in North America

PSCI 4605 [0.5] Gender in International Relations

Psychology

PSYC 3603 [0.5] Psychology of Women

Public Administration

PADM 4213 [0.5] Gender and Public Policy

Religion

RELI 3101 [0.5] Special Topics in Religions and the Body

Sexuality Studies

SXST 2101 [0.5] Sexuality Studies: A Critical Introduction

SXST 2102 [0.5] Sexuality, Gender, and Security

SXST 3103 [0.5] Sexuality and Disability

SXST 3104 [0.5] Transnational Sexualities

SXST 3106 [0.5] Queer(ing) Archives

SXST 3812 [0.5] Interdisciplinary Topics in Sexuality Studies

SXST 4101 [0.5] Interdisciplinary Studies of Sexuality

SXST 4102 [0.5] Queer Theory

SXST 4103 [0.5] Politics of Kink

SXST 4104 [0.5] Sexuality and Political Economy

SXST 4105 [0.5] Queer Ecologies

SXST 4106 [0.5] Queer Aesthetics: Affect, Cultural Production, Sexuality

Social Work

SOWK 3804 [0.5] Law of the Family

SOWK 4206 [0.5] Feminist Counselling

Sociology

SOCI 2043 [0.5] Sociology of the Family

SOCI 2045 [0.5] Gender and Society

SOCI 3040 [0.5] Studies in the Sociology of Gender

SOCI 3044 [0.5] Sociology of Sex and Sexuality

SOCI 3056 [0.5] Women and Health

SOCI 3420 [0.5]	Studies in Gender and Criminal Justice
SOCI 4039 [0.5]	Women in Contemporary Middle East Societies
SOCI 4040 [0.5]	Feminist Sociology of Intersectionality
Women's and Gender Studies	
WGST 2803 [0.5]	Body Matters: The Politics of Bodies
WGST 2810 [0.5]	Sex For Sale
WGST 2811 [0.5]	Masculinities
WGST 2812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 2814 [0.5]	Gender, Sexuality and Cultural Production
WGST 3803 [0.5]	Feminisms and Transnationalism
WGST 3806 [0.5]	Girlhoods
WGST 3807 [0.5]	Gendered Violence
WGST 3812 [0.5]	Selected Topics in Women's and Gender Studies
WGST 4060 [0.5]	African Feminisms
WGST 4812 [0.5]	Selected Topics in Women's and Gender Studies

B.A. Regulations

The regulations presented below apply to all Bachelor of Arts programs. In addition to the requirements presented here, students must satisfy the University regulations common to all undergraduate students including the process of Academic Continuation Evaluation (consult the *Academic Regulations of the University* section of this Calendar).

First-Year Seminars

B.A. degree students are strongly encouraged to include a First-Year Seminar (FYSM) during their first 4.0 credits of registration. Students are limited to 1.0 credit in FYSM and can only register in a FYSM while they have first-year standing in their B.A. program. Students who have completed the Enriched Support Program (ESP), the Indigenous Enriched Support Program (IESP), or who are required to take a minimum of one English as a Second Language (ESLA) credit are not permitted to register in a FYSM.

Breadth Requirement

Among the credits presented at graduation, students in both the B.A. and the B.A. Honours degrees and B.Co.M.S. are required to include 3.0 breadth credits, which must include 1.0 credit in three of the four breadth areas identified below. Credits that fulfil requirements in the Major, Minor, Concentration, Specialization, or Stream may also be used to fulfil the Breadth Requirement.

Students admitted with a completed university degree are exempt from breadth requirements.

Students in the following interdisciplinary programs are exempt from the B.A. breadth requirement.

- African Studies
- Criminology and Criminal Justice
- Environmental Studies

- Human Rights
- Human Rights and Social Justice

Breadth Area 1: Culture and Communication

American Sign Language, Art History, Art and Culture, Communication and Media Studies, Comparative Literary Studies, Digital Humanities, English, Film Studies, French, Journalism, Media Production and Design, Music, Performance in Public Sphere, and Languages (Arabic, English as a Second Language, German, Greek, Hebrew, Indigenous Languages, Italian, Japanese, Korean, Latin, Mandarin, Portuguese, Russian, Spanish)

Subject codes: ARAB, ARTH, ASLA, CHIN, CLST, COMS, DIGH, ENGL, ESLA, FILM, FINS, FREN, GERM, GREK, HEBR, ITAL, JAPA, JOUR, KORE, LANG, LATN, MPAD, MUSI, PIPS, PORT, RUSS, SPAN

Breadth Area 2: Humanities

African Studies, Applied Linguistics and Discourse Studies, Archaeology, Canadian Studies, Child Studies, Classical Civilization, Critical Race Studies, Directed Interdisciplinary Studies, Disability Studies, Environmental and Climate Humanities, European and Russian Studies, History, Human Rights, Humanities, Indigenous Studies, Latin American and Caribbean Studies, Linguistics, Medieval and Early Modern Studies, Philosophy, Religion, Sexuality Studies, South Asian Studies, and Women's and Gender Studies.

Subject codes: AFRI, ALDS, ARCY, CDNS, CHST, CLCV, CRST, DBST, DIST, EACH, EURR, HIST, HUMR, HUMS, INDG, LACS, LING, MEMS, PHIL, RELI, SAST, SXST, WGST

Breadth Area 3: Science, Engineering, and Design

Architecture, Biology, Chemistry, Computer Science, Earth Sciences, Engineering, Environmental Science, Food Science and Nutrition, Health Sciences, Industrial Design, Information Resource Management, Information Technology (BIT), Information Technology (ITEC), Interactive Multimedia and Design, Mathematics, Neuroscience, Network Technology, Optical Systems and Sensors, Photonics, Statistics, Physics, and Technology, Society, Environment.

Subject codes: ACSE, AERO, ARCC, ARCH, ARCN, ARCS, ARCU, BIOC, BIOL, BIT, CHEM, CIVE, CMPS, COMP, ECOR, ELEC, ENSC, ENVE, EARTH, FOOD, HLTH, IDES, IMD, IRM, ISCI, ISCS, ISYS, ITEC, MAAE, MATH, MECH, NET, NEUR, NSCI, OSS, PHYS, PLT, SREE, STAT, SYSC, TSES

Breadth Area 4: Social Sciences

Anthropology, Business, Cognitive Science, Criminology and Criminal Justice, Economics, Environmental Studies, Geography, Geomatics, Global and International Studies, Global Politics, Interdisciplinary Public Affairs, International Affairs, Law, Migration and Diaspora Studies, Political Management, Political Science, Psychology, Public Administration, Public Affairs and Policy Management, Social Work, Sociology/Anthropology, Sociology

Subject codes: ANTH, BUSI, CGSC, CRCJ, ECON, ENST, GEOG, GEOM, GINS, GPOL, INAF, IPAF, LAWS, MGDS, PADM, PAPM, POLM, PSCI, PSYC, SOCI, SOWK

Declared and Undeclared Students

Degree students are considered "Undeclared" if they have been admitted to a degree, but have not yet selected and been accepted into a program within that degree. The status "Undeclared" is available only in the B.A. and B.Sc. degrees. Undeclared students must apply to enter a program upon or before completing 3.5 credits.

Change of Program Within the B.A. Degree

To transfer to a program within the B.A. degree, applicants must normally be *Eligible to Continue* (EC) in the new program, by meeting the CGPA thresholds described in Section 3.1.9 of the *Academic Regulations of the University*.

Applications to declare or change programs within the B.A. degree online must be made online through Carleton Central by completing a Change of Program Elements (COPE) application form within the published deadlines. Acceptance into a program, or into a program element or option, is subject to any enrollment limitations, as well as specific program, program element, or option requirements as published in the relevant Calendar entry.

Minors, Concentrations, and Specializations

Students may add a Minor, Concentration, or Specialization by completing a Change of Program Elements (COPE) application form online through Carleton Central. Acceptance into a Minor, Concentration, or Specialization normally requires that the student be *Eligible to Continue* (EC) and is subject to any specific requirements of the intended Minor, Concentration, or Specialization as published in the relevant Calendar entry and in Section 3.1.9 of the *Academic Regulations of the University*.

Mention : français

Students registered in certain B.A. programs may earn the diploma notation *Mention : français* by completing part of their program requirements in French, and by demonstrating knowledge of the history and culture of French Canada. The general requirements are listed below. For more specific details, consult the departmental program entries.

Students in a B.A. Honours program must present:

1. 1.0 credit in French language;
2. 1.0 credit devoted to the history and culture of French Canada;
3. 1.0 credit at the 2000- or 3000-level in the Honours discipline taken in French; and
4. 1.0 credit at the 4000-level in the Honours discipline taken in French.

Students in a B.A. program must present:

1. 1.0 credit in advanced French;
2. 1.0 credit devoted to the history and culture of French Canada;

3. 1.0 credit at the 2000- or 3000-level in the Major discipline taken in French.

Students in Combined Honours programs must fulfil the *Mention : français* requirement in both disciplines.

Courses taught in French (Items 3 and 4, above) may be taken at Carleton, at the University of Ottawa on the Exchange Agreement, or at a francophone university on a Letter of Permission. Students planning to take courses on exchange or on a Letter of Permission should take careful note of the residence requirement for a minimum number of Carleton courses in their programs. Consult the *Academic Regulations of the University* section of this Calendar for information regarding study on exchange or Letter of Permission.

Admissions Information

Admission Requirements are for the 2022-23 year only, and are based on the Ontario High School System. Holding the minimum admission requirements only establishes eligibility for consideration. The cut-off averages for admission may be considerably higher than the minimum. See also the **General Admission and Procedures** section of this Calendar. An overall average of at least 70% is normally required to be considered for admission. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. The overall average required for admission is determined each year on a program by program basis. Consult admissions.carleton.ca for further details.

Note: Courses listed as *recommended* are not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admissions Information

Admission requirements are based on the Ontario High School System. Prospective students can view the admission requirements through the Admissions website at admissions.carleton.ca. The overall average required for admission is determined each year on a program-by-program basis. Holding the minimum admission requirements only establishes eligibility for consideration; higher averages are required for admission to programs for which the demand for places by qualified applicants exceeds the number of places available. All programs have limited enrolment and admission is not guaranteed. Some programs may also require specific course prerequisites and prerequisite averages and/or supplementary admission portfolios. Consult admissions.carleton.ca for further details.

Note: If a course is listed as *recommended*, it is not mandatory for admission. Students who do not follow the recommendations will not be disadvantaged in the admission process.

Admission Requirements

Degrees

- Bachelor of Arts (B.A.) (Honours)
- Bachelor of Arts (B.A.)

First Year

For B.A. and B.A. (Honours)

The Ontario Secondary School Diploma (OSSD) or equivalent including a minimum of six 4U or M courses. The six 4U or M courses must include a 4U course in English (or *anglais*). Applicants submitting an English language test to satisfy the requirements of the English Language Proficiency section of this Calendar may use that test to also satisfy the 4U English prerequisite requirement.

Biology

For the major in Biology in the B.A. program, in addition to the 4U English, a 4U course in Chemistry is required. Advanced Functions, and Calculus and Vectors are recommended.

Advanced Standing

Applications for admission beyond first year will be assessed on their merits. Applicants must normally be Eligible to Continue in their year level, in addition to meeting the CGPA thresholds described in Section 3.1.9 of the Academic Regulations of the University. Advanced standing will be granted only for those subjects assessed as being appropriate for the program and the stream selected.

Co-op Option

Direct Admission to the 1st Year of the Co-op Option

Co-op is available for the following Majors in the B.A. (Honours) degree: Anthropology, English, Environmental Studies, European and Russian Studies, French, Geography, Geomatics, History, Law, Political Science, Psychology, Sociology.

Applicants must:

1. meet the required overall admission cut-off average and prerequisite course average. These averages may be higher than the stated minimum requirements;
2. be registered as a full-time student in the Bachelor of Arts Honours with one of the majors listed above;
3. be eligible to work in Canada (for off-campus work placements).

Meeting the above requirements only establishes eligibility for admission to the program. The prevailing job market may limit enrolment in the co-op option. Students should also note that hiring priority is given to Canadian citizens for co-op positions in the Public Service Commission.

Note: continuation requirements for students previously admitted to the co-op option and admission requirements for the co-op option after beginning the program are described in the Co-operative Education Regulations section of this Calendar.

Advanced Standing

B.A. and B.A. (Honours) Program

Applications for admission to the second or subsequent years will be assessed on their merits. Advanced standing will be granted only for those courses that are determined to be appropriate.

Women's and Gender Studies (WGST) Courses

WGST 1808 [1.0 credit]

Introduction to Feminist Social Transformation

Overview of intersectional feminist debates as well as historical and contemporary theoretical traditions in gender and sexuality studies, critical race studies, and disability studies. Topics include the social construction of femininity, masculinity, and other identifications; Indigenous, decolonial, and transnational feminisms. Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1402.
Lectures and discussion three hours a week.

WGST 2800 [0.5 credit]

Intersectional Identities

Critical examination of the multiple intersections between gender, as a relation of power and social identity, as these intersect with (neo)colonialism, racism, poverty, ableism and heterosexism in a globalized world.
Includes: Experiential Learning Activity
Prerequisite(s): one of WGST 1808, HUMR 1001, FYSM 1402 or FYSM 1403 or permission of the Institute of Women's and Gender Studies.
Lectures and discussion three hours a week.

WGST 2801 [0.5 credit]

Activism, Feminisms, and Social Justice

A comparative, interdisciplinary examination of feminist activism in the modern era. A range of perspectives and materials are used to examine the objectives, scope, and impact of feminists' efforts to effect social and political change in different historical, cultural, and national settings.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 2803 [0.5 credit]

Body Matters: The Politics of Bodies

Introduction to feminist studies of globalization and politics of bodies. Globalization of ideas, cultures, economics and politics, movement of bodies, bodies as spaces for disrupting norms of sex, gender, race, class, ability, sexuality, embodiment and embodied resistance in a globalized world.
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 2810 [0.5 credit]**Sex For Sale**

Explores feminist perspectives on the sex industry, critically analyzing various legal approaches to regulation and the social meanings assigned to sex work.

Includes: Experiential Learning Activity

Prerequisite(s): Second year standing and WGST 1808 or FYSM 1402.

Lecture and discussion three hours per week.

WGST 2811 [0.5 credit]**Masculinities**

Theoretical, experiential, cultural and policy issues around masculinities studies. The complexities of masculinities; the intersections of feminist and masculinity studies.

Topics may include hegemonic, racialized, homosexual, and Other(ed) masculinities. Feminist theories and transnational perspectives frame course content and discussions.

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week.

WGST 2812 [0.5 credit]**Selected Topics in Women's and Gender Studies**

An interdisciplinary analysis of one or more topics in women's and gender studies.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week. This course is repeatable when the topic changes.

WGST 2814 [0.5 credit]**Gender, Sexuality and Cultural Production**

How gender and cultural (re)production (literature, visual/performing arts, social media) and consumption articulate, circulate, and transform each other within economic, political, and social contexts. Emphasis on role, object, processes, and representations.

Prerequisite(s): second-year standing.

Lectures and discussion three hours a week.

WGST 3001 [0.5 credit]**Theory and Research in Feminist Social Transformation**

Interdisciplinary and intersectional approach introducing students to contemporary feminist, Indigenous, decolonial, and transnational theories, issues, conflicts, methodologies, and critiques of prevailing approaches to the construction of knowledge. Themes include, feminist epistemology, ontology, knowledge, and ethics in feminist research.

Includes: Experiential Learning Activity

Precludes additional credit for WGST 3809 (no longer offered), WGST 3810 (no longer offered).

Prerequisite(s): Third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.

Lecture three hours a week.

WGST 3803 [0.5 credit]**Feminisms and Transnationalism**

Feminist analyses of the diversity of transnational experiences around rights, health, education, motherhood, fathering, work, social media and technological change, among others. Topics may include: migration, environment, wars/conflicts, neocolonialism, diaspora, human trafficking, refugee issues and displaced populations.

Prerequisite(s): third-year standing, and 1.0 credit in WGST; or permission of the Institute.

WGST 3806 [0.5 credit]**Girlhoods**

The emerging discipline of girlhood studies; social and cultural constructions of girlhood and categories of difference. Topics may include the commercialization of girlhood, popular culture and girls, negotiating identities, violence, sexualities, agency and activism in a globalizing world.

Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute.

Lecture three hours a week.

WGST 3807 [0.5 credit]**Gendered Violence**

Theories, concepts and contexts of the complex manifestations of gendered violence in the lives of women, men and children globally.

Precludes additional credit for WGST 3005 Section "A", if taken in Winter 2012 and WGST 3005 Section "A" if taken in Fall 2009.

Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.

Lecture three hours a week.

WGST 3812 [0.5 credit]**Selected Topics in Women's and Gender Studies**

An interdisciplinary analysis of one or more topics in women's and gender studies.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and 1.0 credit in WGST.

Lecture three hours a week.

WGST 4003 [0.5 credit]**Traversing Feminisms**

Interdisciplinary overview of key historical concepts and issues in Women's and Gender Studies in the areas of theory, epistemology, and research design. Topics will vary from year to year. Provides additional background for students entering Women's and Gender Studies from other disciplines.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Institute.

Also offered at the graduate level, with different requirements, as WGST 5003, for which additional credit is precluded.

Seminar three hours a week.

WGST 4060 [0.5 credit]**African Feminisms**

African feminisms as theoretical interventions and as political practice, and as diverse forms. Gender as a marker of power: status, hierarchy, social capability, and as a system of distribution of resources, responsibilities and solidarities.

Includes: Experiential Learning Activity

Also listed as AFRI 4060.

Prerequisite(s): Fourth year standing and WGST 1808 or FYSM 1402 OR permission of the Institute of Women's and Gender Studies.

Seminar three hours per week.

WGST 4800 [0.5 credit]**Women's and Gender Studies Practicum**

Experience in research through a combination of classroom seminars and a field placement. Each project will be negotiated individually as a contract between the student, instructor and institutional partner.

Includes: Experiential Learning Activity

Precludes additional credit for WGST 4903 (no longer offered).

Prerequisite(s): Fourth year standing and WGST 3001 OR WGST 3809 (no longer offered) and WGST 3810 (no longer offered), with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.

WGST 4801 [1.0 credit]**Women's and Gender Studies Practicum**

Experience in applied feminisms through a combination of classroom seminars and internship. Each project will be negotiated individually as a contract between the student, instructor and institutional partner. Students must complete both the in-class and the internship portion of the course.

Includes: Experiential Learning Activity

Precludes additional credit for WGST 4800, WGST 4903 and WGST 4904 (no longer offered).

Prerequisite(s): Fourth year standing and WGST 3001 OR WGST 3809 (no longer offered) and WGST 3810 (no longer offered) with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.

Also offered at the graduate level, with different requirements, as WGST 5920, for which additional credit is precluded.

This full-credit course is offered intensively in one term.

WGST 4811 [1.0 credit]**Honours Research Project in Women's and Gender Studies**

Students will undertake a major research project on some aspect of women's and gender studies under the supervision of a faculty member.

Includes: Experiential Learning Activity

Prerequisite(s): A major CGPA of at least 11.00, plus WGST 3809 and WGST 3810 OR WGST 3001 and fourth-year standing in B.A. Hons. Women's and Gender Studies program, or permission of the Institute of Women's and Gender Studies.

WGST 4812 [0.5 credit]**Selected Topics in Women's and Gender Studies**

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.

Seminar three hours a week. This course is repeatable when the topic changes.

WGST 4814 [0.5 credit]**Independent Study**

Reading or research course supervised by a faculty member. Written proposal approved by the supervisor must be submitted before last day of course changes. Normally, only 0.5 credit of independent study may be counted in the program.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in a Women's and Gender Studies program or permission of the Institute of Women's and Gender Studies.

Courses

Aerospace Engineering (AERO)
African Studies (AFRI)
American Sign Language (ASLA)
Anthropology (ANTH)
Applied Linguistics and Discourse Studies (ALDS)
Arabic (ARAB)
Archaeology (ARCY)
Architectural Conservation and Sustainability Engineering (ACSE)
Architecture
 Theory/History (ARCH)
 Technical (ARCC)
 Urban (ARCU)
 Techniques (ARCN)
 Design Studios/Design Thesis/Research (ARCS)
Art and Architectural History (ARTH)
Biochemistry (BIOC)
Biology (BIOL)
Business (BUSI)
Canadian Studies (CDNS)
Centre for Initiatives in Education (CIED)
Chemistry (CHEM)
Childhood and Youth Studies (CHST)
Chinese (CHIN)
Civil Engineering (CIVE)
Classical Civilization (CLCV)
Co-operative Education (COOP)
Cognitive Science (CGSC)
Communication and Media Studies (COMS)
Communication Courses for Disciplines and Professions (CCDP)
Computer Science (COMP)
Criminology and Criminal Justice (CRCJ)
Critical Race Studies (CRST)
Digital Humanities (DIGH)
Disability Studies (DBST)
Earth Sciences (ERTH)
Economics (ECON)
Electronics (ELEC)
Engineering Common Core Courses (ECOR)
English (ENGL)
English as a Second Language (ESLA)
Environmental and Climate Humanities (EACH)
Environmental Engineering (ENVE)
Environmental Science (ENSC)
Environmental Studies (ENST)
European, Russian and Eurasian Studies (EURR)
Film Studies (FILM)
First-Year Seminars (FYSM)
Food Science (FOOD)
French (FREN)
French Interdisciplinary Studies (FINS)
Geography (GEOG)
Geomatics (GEOM)
German (GERM)
Global and International Studies (GINS)
Global Politics (GPOL)
Greek (GREK)
Health Sciences (HLTH)
History (HIST)
Human Rights (HUMR)
Humanities (HUMS)
Indigenous Studies (INDG)
Industrial Design (IDES)
Information Technology
 Information Resource Management (IRM)
 Information Technology (BIT)
 Interactive Multimedia and Design (IMD)
 Network Technology (NET)
 Optical Systems and Sensors (OSS)
Information Technology (ITEC)
Integrated Science (INSC)
Interdisciplinary Public Affairs (IPAF)
Interdisciplinary Science (ISCI)
Interdisciplinary Science and Practice (ISAP)
Interdisciplinary Studies (DIST)
International Affairs (INAF)
Italian (ITAL)
Japanese (JAPA)
Journalism and Communication (JOUR)
Korean (KORE)
Language Studies (LANG)
Latin (LATN)
Latin American and Caribbean Studies (LACS)
Law (LAWS)
Linguistics (LING)
Mathematics (MATH)
Mechanical Engineering (MECH)
Mechanical and Aerospace Engineering (MAAE)
Media Production and Design (MPAD)
Medieval and Early Modern Studies (MEMS)
Migration and Diaspora Studies (MGDS)
Music (MUSI)
Natural Sciences (NSCI)
Neuroscience (NEUR)
Philosophy (PHIL)
Physics (PHYS)
Political Management (POLM)
Political Science (PSCI)
Portuguese (PORT)
Psychology (PSYC)
Public Affairs and Policy Management (PAPM)
Public Policy and Administration (PADM)
Religion (RELI)
Russian (RUSS)
Sexuality Studies (SXST)
Social Work (SOWK)
Sociology (SOCL)
Spanish (SPAN)
Statistics (STAT)
Sustainable and Renewable Energy Engineering (SREE)
Systems and Computer Engineering (SYSC)

Technology, Society, Environment Studies (TSES)

Women's and Gender Studies (WGST)

Summer session: some of the courses listed in this Calendar are offered during the summer. Hours and scheduling for summer session courses will differ significantly from those reported in the fall/winter Calendar. To determine the scheduling and hours for summer session classes, consult the class schedule at central.carleton.ca

Not all courses listed are offered in a given year. For an up-to-date statement of course offerings for the current session and to determine the term of offering, consult the class schedule at central.carleton.ca

Aerospace Engineering (AERO)

Aerospace Engineering (AERO) Courses

AERO 2001 [0.5 credit]

Aerospace Engineering Graphical Design

Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Aerospace-specific CAD (Computer-Aided Design) assignments including production of detail and assembly drawings from actual aerospace physical models.

Includes: Experiential Learning Activity

Also listed as MAAE 2001.

Prerequisite(s): Second-year status in Engineering.

Lectures and tutorials two hours a week, laboratory four hours a week.

AERO 3002 [0.5 credit]

Aerospace Design and Practice

Design approach and phases. Design integration. Influence of mission and other requirements on vehicle configuration. Trade-off studies, sizing and configuration layout. Flight vehicle loads, velocity-load factor diagram. Structural design: overall philosophy, role in design process, methods. Basic orbital mechanics; launch vehicle sizing.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2001 and third-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

AERO 3101 [0.5 credit]

Lightweight Structures

Structural concepts; theory of elasticity; bending, torsion and shear in thin-walled beams having single or multi-cell sections; work and energy principles; deformation and force analysis of advanced structures, including stiffened thin-wall panels; finite element methods. Stability and buckling of thin-walled structures.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 3202.

Lectures three hours a week; problem analysis one hour a week.

AERO 3240 [0.5 credit]

Orbital Mechanics

Review of translational kinematics and dynamics. Keplerian two-body problem: Kepler's laws, orbital elements, orbit determination. Orbital perturbations: oblateness of the Earth, atmospheric drag. Orbital maneuvers and interplanetary flights. Advanced topics.

Prerequisite(s): MAAE 2101.

Lectures three hours per week, tutorial one hour per week.

AERO 3700 [0.5 credit]

Aerospace Materials

Properties, behaviour and manufacturing methods for metals, polymers and ceramics used in aerospace applications. Specialty alloys for gas turbines. Properties and manufacture of aerospace composites. Behaviour of materials in space.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2700.

Lectures three hours a week; problem analysis one hour a week.

AERO 3841 [0.5 credit]

Spacecraft Design I

Design of spacecraft and spacecraft subsystems with emphasis on mission requirements and current design methods: spacecraft configuration, payload, structural, attitude control, thermal, power, and other related subsystems. Spacecraft integration and testing.

Includes: Experiential Learning Activity

Prerequisite(s): AERO 3240.

Lectures three hours a week, tutorials or laboratories three hours per week.

AERO 4003 [0.5 credit]

Aerospace Systems Design

Stress and deflection analysis; fatigue, safe life, damage tolerant design. Propulsion systems integration; landing gear; control and other subsystems. Mechanical component design. Airworthiness regulations and certification procedures. Weight and cost estimation and control. System reliability. Design studies of aircraft or spacecraft components.

Includes: Experiential Learning Activity

Prerequisite(s): AERO 3002 and fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

AERO 4009 [0.5 credit]

Aviation Management and Certification

Product development, quality control. Strategic organizational analysis and design. Airworthiness, type certification and planning, delegation of authority, airplane flight manual. Aerospace system design and safety.

Prerequisite(s): fourth-year status in Engineering or permission of the department.

Lectures three hours per week.

AERO 4300 [0.5 credit]

Acoustics and Noise Control

Behaviour of compressible fluids, sound waves and properties of sound sources; measurement of sound; human perception of sound; prediction methods based on energy considerations; sound propagation in realistic environments: outdoors, rooms, ducts; absorption and transmission loss, noise control; case studies.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering or by permission of department.

Lectures three hours a week.

AERO 4302 [0.5 credit]**Aerodynamics and Heat Transfer**

Differential equations of motion. Viscous and inviscid regions. Potential flow: superposition; thin airfoils; finite wings; compressibility corrections. Viscous flow: thin shear layer approximation; laminar layers; transition; turbulence modeling. Convective heat transfer: free versus forced convection; energy and energy integral equations; turbulent diffusion.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 3300 or MECH 3310.

Also offered at the graduate level, with different requirements, as MECH 5000, for which additional credit is precluded.

Lectures three hours a week, problem analysis two hours a week.

AERO 4304 [0.5 credit]**Computational Fluid Dynamics**

Governing equations of fluid motion (full & simplified). Discretization based on finite difference, finite volume, and finite element methods. Explicit and implicit integration schemes. Numerical stability. Numerical solutions of the Navier-Stokes equations: RANS, LES and DNS. Turbulence modeling. Programming-based assignments (convection/diffusion).

Prerequisite(s): (MAAE 3300 or MECH 3310), completion of or concurrent registration in AERO 4302 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

AERO 4306 [0.5 credit]**Aerospace Vehicle Performance**

Morphology of aircraft and spacecraft. Performance analysis of fixed wing aircraft: drag estimation, propulsion, take-off, climb and landing, endurance, payload/range, manoeuvres; operational economics. Performance analysis of rotor craft: rotor-blade motion, hovering and vertical ascent, forward flight, and autorotation. Rocket propulsion; escape velocity; orbital dynamics.

Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4308 [0.5 credit]**Aircraft Stability and Control**

Static stability and control: equilibrium requirements; longitudinal stability requirements; neutral points; manoeuvring flight; control forces and control requirements; lateral static stability certification requirements. Dynamic stability: axis systems; governing equations; phugoid and short period modes; lateral dynamic modes. Closed-loop control.

Prerequisite(s): MAAE 3500 and fourth-year status in Engineering.

Also offered at the graduate level, with different requirements, as MECH 5101, for which additional credit is precluded.

Lectures three hours a week.

AERO 4402 [0.5 credit]**Aerospace Propulsion**

Propulsion requirements, effects of Mach Number, altitude, and application; basic propeller theory; propeller, turboshaft, turbojet, turbofan and rocket; cycle analysis and optimization for gas turbine power plant; inter-relations between thermodynamic, aerodynamic and mechanical designs; rocket propulsion; selection of aeroengines.

Precludes additional credit for MECH 4401.

Prerequisite(s): MAAE 2400, (MAAE 3300 or MECH 3310), and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

AERO 4442 [0.5 credit]**Transatmospheric and Spacecraft Propulsion**

Planetary/interplanetary environments and effects. Launch and spacecraft propulsion: liquid/solid/hybrid rockets, ram/scramjets, combined cycle engines, electrothermal, electromagnetic, electrostatic, nuclear, and propellantless propulsion. Trajectory analysis, multi-staging, separation dynamics. Advanced engine concepts.

Prerequisite(s): MAAE 2400, (MAAE 3300 OR MECH 3310) and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4446 [0.5 credit]**Heat Transfer for Aerospace Applications**

Fundamentals of heat transfer with emphasis on aerospace systems design. Conduction, convection and radiation modes of heat transfer. Radiation exchange between surfaces and view factors. Radiation in spacecraft thermal control. High speed flight and reentry heating.

Precludes additional credit for MECH 4406.

Prerequisite(s): MAAE 2400 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4504 [0.5 credit]**Avionics Systems**

RF engineering concepts. Aviation communication systems. Relative and absolute navigation; landing systems. Radar systems; weather radar. Aircraft systems integration; databus standards; electrical systems; power generation and distribution. Safety critical software. Electromagnetic compatibility and interference. Regulations and certification of avionic systems.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 4504.

Prerequisite(s): 4th year status in Engineering. Not open to students in Electrical Engineering, Computer Systems Engineering, Engineering Physics or Communications Engineering.

Lectures three hours a week.

AERO 4540 [0.5 credit]**Spacecraft Attitude Dynamics and Control**

Rigid body dynamics. The dynamic behavior of spacecraft. Environmental torques. The design of attitude control systems. Gravity gradient, spin, and dual spin stabilization. Attitude manoeuvres. The design of automatic control systems. Impacts of attitude stabilization techniques on mission performance.

Prerequisite(s): AERO 3240 and MAAE 3500 and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4602 [0.5 credit]**Introductory Aeroelasticity**

Review of structural behaviour of lifting surface elements; structural dynamics, Laplace Transforms, dynamic stability; modal analysis; flutter, Theodorsen's theory; flutter of a typical section; wing flutter, T-tail flutter, propeller whirl flutter; gust response; buffeting, limit cycle flutter.

Prerequisite(s): (MAAE 3300 or MECH 3310) and SYSC 3600 and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4607 [0.5 credit]**Rotorcraft Aerodynamics and Performance**

Rotorcraft history and fundamentals. Momentum theory: hover, axial climb and descent, autorotation, forward flight, momentum theory for coaxial and tandem rotors. Blade element analysis. Rotor airfoil aerodynamics. Rotor blade dynamics and trim. Helicopter performance, height-velocity curves, conceptual design. High-speed rotorcraft.

Prerequisite(s): MAAE 3004 and (MAAE 3300 or MECH 3310) and fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

AERO 4608 [0.5 credit]**Composite Materials**

Reinforcing mechanisms in composite materials; material properties. Strength and elastic constants of unidirectional composites; failure criteria. Analysis of laminated plates; bending and eigenvalue problems. Environmental effects and durability. Damage tolerance. Design of composite structures.

Prerequisite(s): MAAE 2202 and fourth-year status in Engineering.

Lectures three hours a week.

AERO 4609 [0.5 credit]**Joining of Materials**

Design for joining: base material and component geometry. Selection of joining method and filler material; Adhesive bonding; Soldering; Brazing; Diffusion bonding; Resistance welding; Fusion welding (GTAW, EB, laser and plasma arc); Friction welding; NDE. Emphasis on Aerospace materials and applications.

Prerequisite(s): MAAE 2700 and fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

AERO 4842 [0.5 credit]**Spacecraft Design II**

System view of spacecraft. Requirements definition. Spacecraft payloads (remote sensing, imaging systems, astronomy instrumentation etc.). Exploration missions. Implications for systems and missions. Space system design case studies.

Includes: Experiential Learning Activity

Precludes additional credit for AERO 4802 (no longer offered).

Prerequisite(s): AERO 3841 and fourth-year status in Engineering.

Lectures three hours a week, tutorials or laboratories one hour per week.

African Studies (AFRI)

African Studies (AFRI) Courses**AFRI 1001 [0.5 credit]****Introduction to African Studies I**

Introduction to African studies, including history, geography, literature, and the arts.

Lecture three hours per week, or two-hour lecture and one hour discussion group per week.

AFRI 1002 [0.5 credit]**Introduction to African Studies II**

Introduction to contemporary political, economic, and social dimensions of Africa.

Lecture three hours per week.

AFRI 2002 [0.5 credit]**The Horn of Africa**

The economic, social and political challenges facing the Horn of Africa, placing them in historical and global context. These countries may be discussed: Djibouti, Eritrea, Ethiopia, Somalia, Sudan, South Sudan.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2003 [0.5 credit]**The Great Lakes Region of Africa**

The economic, social and political challenges facing the Great Lake Regions of Africa, including the 1994 Rwanda genocide and its aftermath. These countries may be discussed: Burundi, Democratic Republic of Congo, Kenya, Rwanda, Tanzania, Uganda.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2004 [0.5 credit]**North Africa**

The economic, social and political challenges facing Egypt and the Maghreb countries of North Africa, including the "Arab Spring". These countries may be discussed: Algeria, Egypt, Libya, Morocco, Mauritania, Tunisia, Western Sahara.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2005 [0.5 credit]**West Africa**

The economic, social and political challenges facing countries of West Africa, including domestic issues and regional relations. These countries may be discussed: Benin, Burkina Faso, Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 2006 [0.5 credit]**Southern Africa**

The economic, social and political challenges facing the countries of southern Africa, including the legacies of apartheid. These countries may be discussed: Angola, Botswana, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, Tanzania, Zambia, Zimbabwe.

Prerequisite(s): AFRI 1001 or AFRI 1002 or FYSM 1901 or permission of the Institute of African Studies.

Lecture three hours a week, or two-hour lecture and one-hour discussion group per week.

AFRI 3001 [0.5 credit]**Globalization and Popular Culture in Africa**

This course examines new popular life-worlds in Africa. Though potentially "elusive" to conceptualize, this course shows how these forms of popular culture are related to the role of youth culture and social media in an age of globalization and democratization.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3002 [0.5 credit]**Regions in Africa: Cultures, Society, Politics**

Using dominant linguistic borderlines that have shaped much of the African experience in the last century, this course will look at themes cutting across culture, geography, society and politics in francophone, anglophone, lusophone and arabophone Africa. Precludes additional credit for AFRI 2001 (no longer offered).

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3003 [0.5 credit]**African Social and Political Thought**

The African communitarian tradition. Contemporary African social and political thought, situated in their broad historical contexts.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3004 [0.5 credit]**The African City**

Historical emergence and contemporary issues of the African city.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3005 [0.5 credit]**African Migrations and Diasporas**

Movements of African peoples, from the slave trade era to the present. African diaspora communities around the world and their relationship with Africa.

Prerequisite(s): third year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Lecture three hours a week.

AFRI 3007 [0.5 credit]**Special Topic in African Studies**

A special topic related to African Studies, through one or more disciplinary lenses. Course content will vary from year to year.

Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.

Lectures three hours a week.

AFRI 3100 [0.5 credit]**African Studies Abroad: Selected Topics**

Based at one of Carleton's partner universities in Africa, course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in African studies, as selected by the instructor. Topic and location may change annually.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and approval by the Director of the Institute of African Studies.

AFRI 3200 [0.5 credit]**Thematic Topic**

A special topic that takes a thematic approach to African Studies. Course content will vary from year to year.

Prerequisite(s): a 2000-level AFRI course or third-year standing and 1.0 credit in AFRI.

Lectures three hours a week.

AFRI 3609 [0.5 credit]**African Cinema**

Major moments, debates, figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the national, the continental, the diasporic, the global, race, Afro-futurism, and world cinema, interrogating in the process the very category of "African cinema."

Also listed as FILM 3609.

Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor.

Lecture and screening three hours a week, lecture one hour a week.

AFRI 3900 [0.5 credit]**Placement**

Placement for one term with an African focus.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Institute of African Studies.

AFRI 3916 [0.5 credit]**Spoken Word Poetry Workshop**

This intermediate-level workshop-based course explores traditions of spoken words poetry while requiring students to create and perform their own spoken word poems.

Includes: Experiential Learning Activity

Also listed as ENGL 3916.

Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.

Workshops three hours a week

AFRI 4000 [0.5 credit]**Advanced Topics in African Studies**

Seminar examining a specialized topic in African studies. The topic will vary from year to year.

Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Seminar three hours per week.

AFRI 4003 [0.5 credit]**History of 'The African Child'**

Students will analyze the history of the figure of 'the African child' using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.

Includes: Experiential Learning Activity

Also listed as CHST 4003.

Precludes additional credit for CHST 4001 if taken in 2014-15.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

AFRI 4050 [0.5 credit]**Selected Topics in African Studies**

Selected topics in African studies not ordinarily treated in the regular course program. The choice of topic varies from year to year. Students should check with the institute regarding the topic offered.

Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Also offered at the graduate level, with different requirements, as AFRI 5050, for which additional credit is precluded.

Seminar three hours per week.

AFRI 4060 [0.5 credit]**African Feminisms**

African feminisms as theoretical interventions and as political practice, and as diverse forms. Gender as a marker of power: status, hierarchy, social capability, and as a system of distribution of resources, responsibilities and solidarities.

Prerequisite(s): fourth-year standing and at least 1.0 credit in AFRI or permission of the Institute of African Studies.

Also offered at the graduate level, with different requirements, as AFRI 5060, for which additional credit is precluded.

Seminar three hours per week

AFRI 4900 [0.5 credit]**Tutorial in African Studies**

A tutorial on selected topics in which seminars are not available.

Prerequisite(s): Permission of the Institute of African Studies and agreement of an instructor.

American Sign Language (ASLA)

American Sign Language (ASLA) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ASLA 1010 [0.5 credit]**First-Year American Sign Language I**

For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance.

Precludes additional credit for ASLA 1110.

Four hours a week.

ASLA 1020 [0.5 credit]**First-Year American Sign Language II**

Continuation of first-year American Sign Language. Basic communicative competence plus anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance.

Precludes additional credit for ASLA 1110.

Prerequisite(s): grade of C or higher in ASLA 1010, or permission of the School.

Four hours a week.

ASLA 1110 [1.0 credit]**Intensive First-Year American Sign Language**

For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture. Compulsory attendance.

Precludes additional credit for ASLA 1010 or ASLA 1020.

Eight hours a week (one term).

ASLA 2010 [0.5 credit]**Second-Year American Sign Language I**

Study of American Sign Language beyond the elementary level. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance.

Precludes additional credit for ASLA 2110.

Prerequisite(s): grade of C or higher in ASLA 1020, ASLA 1110, or permission of the School.

Four hours a week.

ASLA 2020 [0.5 credit]**Second-Year American Sign Language II**

Continuation of second-year American Sign Language. Study of targeted lexical and grammatical features, as well as specific conversational skills. Further exploration of the culture of deaf people. Compulsory attendance.

Precludes additional credit for ASLA 2110.

Prerequisite(s): grade of C or higher in ASLA 2010, or permission of the School.

Four hours a week.

ASLA 2110 [1.0 credit]**Intensive Second-Year American Sign Language**

Further study of American Sign Language to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for ASLA 2010 and ASLA 2020.

Prerequisite(s): grade of C or higher in ASLA 1020 or ASLA 1110, or permission of the School.

Eight hours a week (one term).

ASLA 3010 [0.5 credit]**Third-Year American Sign Language I**

Receptive and expressive mastery of grammar and lexicon of American Sign Language. Advanced conversation skills across different registers. Advanced insight into the culture of the deaf community. Compulsory attendance.

Prerequisite(s): grade of C or higher in ASLA 2020, ASLA 2110, or permission of the School.

Three hours a week.

ASLA 3020 [0.5 credit]**Third-Year Advanced American Sign Language II**

Continuation of third-year American Sign Language. Receptive and expressive mastery of grammar and lexicon of American Sign Language. Advanced conversation skills across different registers. Advanced insight into the culture of the deaf community. Compulsory attendance.

Prerequisite(s): grade of C or higher in ASLA 3010, or permission of the School.

Three hours a week.

ASLA 4010 [0.5 credit]**Fourth-Year American Sign Language I**

Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance.

Prerequisite(s): grade of C or higher in ASLA 3020, or permission of the School.

Three hours a week.

ASLA 4020 [0.5 credit]**Fourth-Year American Sign Language II**

Continuation of fourth-year American Sign Language. Focus on the development of receptive and productive skills above what is expected in everyday conversation. Skills in specific contexts such as social services, health, business and government. Compulsory attendance.

Prerequisite(s): grade of C or higher in ASLA 4010, or permission of the School.

Three hours a week.

ASLA 4900 [1.0 credit]**Independent Study**

Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School. Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

ASLA 4901 [0.5 credit]**Independent Study**

Research in a topic in American Sign Language or deaf culture under the supervision of a member of the School. Includes: Experiential Learning Activity
Prerequisite(s): third- or fourth-year standing in the Minor in American Sign Language, grade of C or higher in ASLA 4020 or equivalent, or permission of the School.

Anthropology (ANTH)

Anthropology (ANTH) Courses**ANTH 1001 [0.5 credit]****Introduction to Socio-Cultural Anthropology**

What does it mean to be human? Anthropologists have approached this question by using the ethnographic method to understand the diverse ways people create shared worlds of meaning. In this course students will learn how culture shapes experience, and how ethnography describes this process. Includes: Experiential Learning Activity
Precludes additional credit for ANTH 1000 (no longer offered), HUMS 1005.
Lectures/discussions three hours a week.

ANTH 1002 [0.5 credit]**Introduction to Issues in Anthropology**

This course introduces students to anthropology through in-depth consideration of selected issues facing contemporary cultures and societies. Selected issue(s) will reflect the expertise of the instructor and could include current debates related to race, gender, development, politics, economics, religion, technology, health and the environment. Includes: Experiential Learning Activity
Precludes additional credit for ANTH 1000 (no longer offered).
Lectures/discussions three hours a week.

ANTH 2001 [1.0 credit]**Foundations in Socio-Cultural Anthropology**

Exploration of basic anthropological concepts and analytical strategies through case studies. Emphasis on socio-cultural diversity as documented by ethnographic research with attention to the role of culture in articulating gender, kinship, economic and political relations. Includes: Experiential Learning Activity
Prerequisite(s): ANTH 1001 or ANTH 1002.
Lectures and discussions three hours a week.

ANTH 2020 [0.5 credit]**Race and Ethnicity**

Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally. Also listed as SOCI 2020.
Lectures and workshop three hours a week.

ANTH 2040 [0.5 credit]**Anthropology and Gender**

The study of gender in anthropology, including its theoretical, cross-cultural and ethnographic aspects. Emphasis on gender as a sociocultural process that is at once discursive and embodied, and that varies in distinct cultural, socio-historical, geopolitical, and economic contexts. Includes: Experiential Learning Activity
Precludes additional credit for ANTH 2408 (no longer offered).
Lectures and workshop three hours a week.

ANTH 2060 [0.5 credit]**Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives**

Drawing on anthropological and sociological approaches, students will explore girls' lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence. Also listed as SOCI 2060.
Prerequisite(s): second-year standing or permission of the instructor.
Two hour lecture plus one hour tutorial per week.

ANTH 2070 [0.5 credit]**Psychological Anthropology**

Exploration of the relative and the universal in relations between the psychological self and the cultural environment. Topics may include anthropology of psychiatric institutions and practices, the cultural relativity of emotions, the self in everyday life and ritual. Lecture/discussion groups three hours a week.

ANTH 2080 [0.5 credit]**Humans/Animals: the More-than-Human in Social Research**

Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the 'more than human' in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene. Also listed as SOCI 2080.
Lecture/discussion groups three hours per week.

ANTH 2180 [0.5 credit]**Foundations in Community Engagement**

Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.

Includes: Experiential Learning Activity

Also listed as SOCI 2180.

Prerequisite(s): Second year standing or permission of instructor.

Lecture, discussion and project work three hours a week.

ANTH 2500 [0.5 credit]**Culture and Symbols**

The representation and construction of culture through symbols. Topics may include material culture, rituals, archetypes, myths and mythmaking.

Includes: Experiential Learning Activity

Precludes additional credit for ANTH 3304 (no longer offered).

Lectures and workshop three hours a week.

ANTH 2510 [0.5 credit]**Theories of Human Nature**

Critical, cross-cultural exploration of theories of human nature. Begins with a survey of western anthropological models of human consciousness and examines scientific, philosophical and religious perspectives with reference to ethnographic research on myth, religion and science produced by western and non-western cultures.

Lectures and discussion three hours a week.

ANTH 2550 [0.5 credit]**Religion and Society**

Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes.

Includes: Experiential Learning Activity

Also listed as RELI 2736.

Lectures and workshop three hours a week.

ANTH 2610 [0.5 credit]**Studies in Indigenous Peoples of North America: Current Issues in Anthropological Research**

Examination of a range of issues related to particular indigenous communities and regions of North America. Topics include political, socio-economic, and cultural transformations, Aboriginal title and rights, collaborative research, and other topics relevant to indigenous communities and indigenous - non-indigenous relations. Precludes additional credit for ANTH 3610 (no longer offered).

Lecture/discussion groups three hours a week.

ANTH 2620 [0.5 credit]**Ethnography of Sub-Saharan Africa**

Examination of selected areas of contemporary Sub-Saharan Africa through current anthropological research. Topics may include war and displacement, religion, politics, international development, history, popular culture, colonialism, witchcraft, health and kinship.

Precludes additional credit for ANTH 3620 (no longer offered).

Lecture/discussion groups three hours a week.

ANTH 2630 [0.5 credit]**Studies in Asian Societies: Current Issues in Anthropological Research**

Examination of contemporary Asia through anthropological research. Topics may include cultural practices, religion, health issues, economics, politics, history, colonialism and social change. Emphasis will vary by sub-region from year to year, e.g., focusing on South, East or Southeast Asia.

Lectures and discussion three hours a week.

ANTH 2635 [0.5 credit]**Tradition and Modernity in the Pacific**

Relationships between contemporary Pacific societies and the rest of the world. Topics may include colonialism and its aftermaths, cultural revival, mining, Christianity, alternative modernities, diasporas, and indigenous media.

Lecture/discussion groups three hours a week.

ANTH 2640 [0.5 credit]**Andean Ethnography**

Ethnographic survey of the Andes. The formation of "indigenous" communities and their relation to urban centres and nation-states. Topics may include state formation, social movements, agrarian reform, political economy of food, class, ethnicity and racism, rural-urban migration, community.

Lectures and discussion three hours a week.

ANTH 2645 [0.5 credit]**The Postcolonial Middle East**

How do people live in the Middle East? What political, historical and religious forces shape their everyday life? This class draws on essays, ethnographies, and movies to challenge the narratives of chronic violence, excessive religiosity, and prehistoric misogyny that haunt our understanding of this region.

Lecture and discussion three hours a week.

ANTH 2650 [0.5 credit]**Ethnography of Mesoamerica**

Ethnographic survey of Mexico and Guatemala focusing on a variety of rural and urban communities throughout the area with emphasis on indigenous groups. Topics may include nationalism, ethnicity, social organization, gender, cosmology and material culture.

Lectures and discussion three hours a week.

ANTH 2660 [0.5 credit]**Ethnography of North Africa**

Introduction to societies and cultures of North Africa. Topics may include: history and socio-cultural role of Islam, the relations between Arabs and Berbers, ethnography of religious institutions, ritual practices, everyday life, gender, colonialism and post-colonialism, problems of state and religion. Lectures and discussion three hours a week.

ANTH 2670 [0.5 credit]**Ethnography of Brazil**

Examination of selected areas of contemporary Brazil through current anthropological research. Topics may include: processes of nation-formation, colonialism, gender and sexuality, race and racism, health, everyday life, urban ethnography, popular culture, social movements, and institutions such as religion, the family and the state. Lectures and discussion three hours a week.

ANTH 2680 [0.5 credit]**Anthropology of "Mainstream" North America**

Examination of contemporary North American society. Topics may include social class, success myths, schooling, immigration, cities, the self, television, romance, youth sub cultures; how what is seen as "mainstream" is determined. Lectures/discussion groups three hours a week

ANTH 2690 [0.5 credit]**Ethnography of a Selected Area**

Ethnography of a selected area. Area to be announced. Lectures and discussion three hours a week.

ANTH 2815 [0.5 credit]**Selected Topics in Anthropology**

Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Lecture/discussion groups three hours a week.

ANTH 2825 [0.5 credit]**Selected Topics in Anthropology**

Selected topics in anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered. Lectures/discussion groups three hours a week.

ANTH 2850 [0.5 credit]**Development and Underdevelopment**

International development and its socio-cultural practices with consequences at local, national and international levels. Topics may include modernization, dependency, globalization, and development as discourse, political ecology, gender, indigenous knowledge, social movements, and non-governmental organizations. Includes: Experiential Learning Activity Lectures and workshop three hours a week.

ANTH 2915 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the Department for information.

ANTH 2925 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the department for information.

ANTH 3005 [0.5 credit]**Ethnographic Research Methods**

Broad overview of methods through lectures, discussion, and hands-on activities. Research design, ethics, participant-observation, interviewing and other methods, data analysis and ethnographic writing. Prepares students to apply methodological knowledge in careers and projects undertaken for the fourth-year honours research paper and/or ethnographic field course. Includes: Experiential Learning Activity Precludes additional credit for ANTH 2003. Prerequisite(s): ANTH 2001 [1.0]. Lectures three hours a week.

ANTH 3007 [0.5 credit]**History of Anthropological Theory**

Analysis of the development of anthropological thought since the end of the eighteenth to the mid-twentieth century. The development of various theoretical approaches within their historical, social, intellectual and biographical contexts. The implications of these issues may be explored through ethnographies. Precludes additional credit for ANTH 2005 and ANTH 3100. Prerequisite(s): ANTH 2001 [1.0]. Lectures three hours a week.

ANTH 3008 [0.5 credit]**Contemporary Theories in Anthropology**

Contemporary trends in anthropological analyses. Discussion of anthropological theory in its contemporary, interdisciplinary context. Precludes additional credit for ANTH 3006 (no longer offered), ANTH 3100. Prerequisite(s): ANTH 2001. Lecture/discussion groups three hours per week.

ANTH 3010 [0.5 credit]**Language, Culture, and Globalization**

Theoretical and methodological contributions of anthropology to the study of communicative practices in a variety of social and cultural contexts. Language practices, ideologies, and globalization as they intersect with culture, power, race, ethnicity, indigeneity, gender, nationhood and political economy. Prerequisite(s): second-year standing or permission of the instructor. Lecture three hours per week.

ANTH 3020 [0.5 credit]**Studies in Race and Ethnicity**

Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity as they intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, colonialism, international migration, citizenship, and diasporic cultures.

Also listed as SOCI 3020.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures three hours a week.

ANTH 3025 [0.5 credit]**Anthropology and Human Rights**

Examines the concepts of “cultural relativism” and “universalism.” What are human rights? Who has them? How do notions of “human rights” evolve? What about other, non-Western concepts of “individual,” “collectivity,” “rights” and “responsibilities”? What about human rights violations and abuses?.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3027 [0.5 credit]**Studies in Globalization and Human Rights**

Examination of the various dimensions and meanings of globalization and its relationship with human rights. Main emphasis will be on the implications of the emerging global economy for economic, social, political and cultural rights.

Also listed as SOCI 3027, PSCI 3802.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lectures three hours a week.

ANTH 3035 [0.5 credit]**Science, Culture and Society: Social Studies of Science**

Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.

Also listed as SOCI 3035.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3037 [0.5 credit]**Studies in Information Systems and Social Power**

Knowledge/power relations in historical and comparative perspective, with attention to information devices, techniques, and practices.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3040 [0.5 credit]**The Global Middle Class**

The growing numbers of people who could be considered “middle class” are central to both “cultural” and “economic” globalization. This course examines what it means to be middle class theoretically, historically, and cross-culturally. Prerequisite(s): second-year standing or permission of the instructor.

Lecture/discussion groups three hours a week.

ANTH 3045 [0.5 credit]**Children and Childhood in a Globalized World**

A socio-historical and cross-cultural exploration of constructions, deconstructions, and the experience of childhood in Canada and internationally. Compulsory schooling, child labour, protection and regulation in law, the commodification and equalization of childhood, children's social movements, and the emergence of children's rights discourses.

Also listed as SOCI 3045.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

ANTH 3215 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program. The choice of topics varies from year to year. Check with the Department regarding the topic offered.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3225 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program. The choice of topics varies from year to year. Check with the Department regarding the topic offered.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3310 [0.5 credit]**Studies in Medical Anthropology**

Cross-cultural study of the body, illness, healing, health and well-being. Sociocultural factors in the causation, diagnosis, management and meaning of illness. Biocultural and political-economic dimensions of ill health. Ritual and symbolic healing. Ethical concerns and public health applications of anthropology.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3355 [0.5 credit]**Anthropology and the Environment**

Environmental concerns affect everyone, unevenly. How does anthropology illuminate the cultural, social, political and ecological differentiation resulting from and constituting environmental processes? The range of responses considered may address issues of resource access and exploitation, as well as transnational transformations in the concept of nature. Prerequisite(s): second-year standing or permission of the instructor.

Lectures three hours a week.

ANTH 3360 [0.5 credit]**Jokes, Humor, Laughter**

Anthropological inquiries into the phenomenon of humor. Psychoanalytic, semiotic and phenomenological perspectives are applied to ethnographic materials from a variety of cultural contexts.

Lecture/discussion groups three hours per week.

ANTH 3510 [0.5 credit]**Ritual**

Cross-cultural study of ritual, religious and secular, its role in various social processes and relation to other activities. Exploration of variability of ritual and the range of theories that have been developed to account for what ritual does, including intellectualist, functionalist and performative.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures and discussion three hours a week.

ANTH 3550 [0.5 credit]**Studies in Visual Anthropology**

Examination of the anthropological experience as reflected in film/video and still photography. A number of problems are considered, including selectivity, bias, the effect of the observer's presence, and problems in reconstructing past events in film. Issues of media-literacy will be examined. Precludes additional credit for ANTH 3107 (no longer offered).

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3570 [0.5 credit]**Studies in Art, Culture and Society**

Thematic investigation of genres, forms and styles of art, culture and society. Topics may include current debates on social structure and artistic creativity; ideology, cultural memory and politics, patronage and art; cross-cultural representations, taste, social mobility and art; modernism and the avant-garde.

Also listed as SOCI 3570.

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3580 [0.5 credit]**Anthropology of Material Culture and Museums**

How diverse societies are materialized in a wide range of cultural materials from clothing, housing and memorials to more ephemeral materializations such as food, gardens, dance, ritual props and music-making. Emphasis on museum practices and the cultural politics of display.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures and discussion three hours a week.

ANTH 3600 [0.5 credit]**Studies in Anthropology and Indigenous Peoples**

Problems in the interpretation and analysis of various forms of encounters between indigenous peoples and colonizing powers will be examined. Topics may include patterns and practices of contact, cultural syncretism, conquest, domination, relations of ruling, cultural hegemony, resistance and non-compliance.

Includes: Experiential Learning Activity
Precludes additional credit for ANTH 3109 (no longer offered).

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3800 [0.5 credit]**Studies in Applied and Participatory Anthropology**

History, significant approaches, and key topics of applied anthropology and participatory research. Participatory and non-participatory anthropological research on social problems within activities of intervention, which may include policy processes, development projects, evaluation exercises, impact assessments, and advocacy work.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or permission of the instructor.

Lecture three hours a week.

ANTH 3915 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the Department for information.

ANTH 3925 [0.5 credit]**Course-Related Tutorials in Anthropology**

Consult the Department for information.

ANTH 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ANTH 4000 [0.5 credit]**Field Placement in Anthropology**

This course is intended to provide students with practical experience through a field placement equivalent to one day a week. Students are responsible to secure their field placement in a relevant organization with the approval of a Faculty member acting as Field placement coordinator.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours Anthropology standing and permission of the Department.

ANTH 4005 [0.5 credit]**Health and Globalization**

An anthropological examination of the health impacts of global processes, relationships, and movements. May include topics such as economic development and disease, migration and health, medical tourism, transnational reproduction, and the global circulation of bodies, organs, medical technologies, drugs, and pathogens.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4006 [0.5 credit]**Decolonizing Methodologies in the 21st Century: Practicing Engaged Anthropology**

Examination of the breadth of critical literature on 'decolonizing methodologies' within and adjacent to anthropology in the 20th and 21st centuries. The course will equip students with an in-depth understanding of critiques of the discipline's methods and ethics while practicing an engaged anthropology.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours per week.

ANTH 4007 [0.5 credit]**Advanced Studies in Anthropological Theory and Methods**

The course examines debates in theory and methodology currently facing the discipline through a survey of leading-edge issues and approaches.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4020 [0.5 credit]**Advanced Studies in Race and Ethnicity**

An advanced seminar that explores selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors' research interests.

Also listed as SOCI 4020.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4036 [0.5 credit]**Science and Technology Studies: Selected Topics**

The course is concerned with broadening students' understanding of Science and Technology Studies (STS) by focusing on a relevant topic. Topics may vary from year to year. Students should check with the Department regarding the topic offered.

Precludes additional credit for SOCI 4401 (no longer offered).

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4100 [0.5 credit]**Ethnographic Field Course**

In this class, we explore a significant issue in our communities, learning how ethnographic methods can add new perspectives to our own experience and help us appreciate the experience of others. Students learn-through-doing their own small ethnographic projects, peer-to-peer feedback, and reflective discussion.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing or permission of the instructor.

Seminar three hours per week.

ANTH 4109 [0.5 credit]**Ethnography, Gender and Globalization**

Intersections of gender and globalization; ethnographic focus on how the movements of people, goods, ideas, and capital are transforming existing formations of gender and sexualities. Topics and approaches may vary from year to year.

Prerequisite(s): third-year standing or permission of instructor.

Also offered at the graduate level, with different requirements, as ANTH 5109, for which additional credit is precluded.

Seminar three hours a week.

ANTH 4171 [0.5 credit]**Community Engagement Capstone**

Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners.

Includes: Experiential Learning Activity

Also listed as SOCI 4171.

Prerequisite(s): ANTH 2180 and fourth year standing or permission of instructor.

Lecture, discussion and project work three hours per week.

ANTH 4200 [0.5 credit]**War, Security and Citizenship**

Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of object and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements.

Also listed as SOCI 4200.

Prerequisite(s): fourth year standing.

Seminar three hours a week.

ANTH 4215 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the department regarding the topic offered.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4225 [0.5 credit]**Selected Topics in Anthropology**

Topics not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the department regarding the topic offered.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4355 [0.5 credit]**Anthropology of Natural Resources**

Anthropology of natural resources. Topics may include economies, ecologies, cultural and social dynamics of fishing, forestry, lands, mining, oil, wildlife, at varying analytical scales, including a critical examination of the term "natural resource" itself.

Prerequisite(s): third-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as ANTH 5355, for which additional credit is precluded.

Seminars and discussions three hours a week.

ANTH 4500 [0.5 credit]**Advanced Studies in Culture and Symbols**

Contemporary debates in theory and methods regarding analysis of the symbolic processes.

Precludes additional credit for ANTH 4705 (no longer offered).

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4550 [0.5 credit]**Advanced Studies in Visual Anthropology**

Exploration of media representations of the cultural other through student projects based on contemporary anthropological analysis of cross-cultural multimedia: video, photography, mapping and the Internet. The role of media in the dissemination of anthropological research and as the subject of anthropological analysis.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4560 [0.5 credit]**Economic Anthropology**

Anthropology's holistic, comparative and critical contribution to the study of livelihood. How practices and understandings of production, circulation, consumption, and property vary cross-culturally. Relevant theoretical debates including those among formalist (neo-classical), substantivist, Marxist, and interpretive approaches over the applicability of capitalist thinking.

Prerequisite(s): third-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as ANTH 5560, for which additional credit is precluded.

Seminar three hours a week.

ANTH 4570 [0.5 credit]**Political Anthropology**

Can anthropology help us understand politics? Can ethnographic encounters help us approach political theory and political action differently? This seminar will focus on concepts (power, authority, equality) and practices (resistance, subjection, solidarity) through which anthropologists invite us to rethink the way we live together.

Prerequisite(s): third-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as ANTH 5570, for which additional credit is precluded.

Seminar three hours a week.

ANTH 4590 [1.0 credit]**Capstone Seminar in Globalization, Culture, and Power**

This course is dedicated to developing individual student research projects. Through seminar discussions, these student projects will benefit from an introduction to research design and methodologies, analysis and interpretation, as well as issues surrounding ethics, representation, and knowledge production.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the BGINS Globalization, Culture and Power program with a minimum 9.0 GPA or permission of the instructor.

Seminar three hours a week.

ANTH 4610 [0.5 credit]**Advanced Studies in Indigenous Peoples**

This research-based seminar focuses on specific conceptual and methodological issues pertaining to contemporary anthropological research involving Indigenous peoples and communities. Topical focus may vary from year to year.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4620 [0.5 credit]**Advanced Studies in Contemporary Sub-Saharan Africa: Current Issues in Anthropological Research**

Research-based seminar that explores the issues and debates related to anthropological research in contemporary sub-Saharan Africa with emphasis on theoretical, methodological, analytical, ethical, practical and applied problems in anthropological research in that area.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4730 [0.5 credit]**Colonialism and Post-Colonialism**

Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.

Also listed as SOCI 4730.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4750 [0.5 credit]**Advanced Studies in Globalization and Citizenship**

Selected topics on the confluence of processes of globalization, development and citizenship. Examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.

Also listed as SOCI 4750.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

ANTH 4780 [0.5 credit]**Anthropology of Personhood**

Exploration of anthropological approaches to personhood and diversity in constructions of the self in various socio-cultural and historical contexts.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week.

ANTH 4900 [1.0 credit]**Honours Research Paper in Anthropology**

This course offers Honours students the opportunity to write an original research paper in their final year of study. Supported by the HRP supervisor, students develop their projects through seminar discussion addressing issues of research design, ethics, methodology, anthropological analysis, interpretation, and representation.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing.

ANTH 4915 [0.5 credit]**Tutorial in Anthropology**

Consult the Department for information.

ANTH 4925 [0.5 credit]**Tutorial in Anthropology**

Consult the Department for information.

Applied Linguistics and Discourse Studies (ALDS)

Applied Linguistics and Discourse Studies (ALDS) Courses

ALDS 1001 [0.5 credit]**Language Matters: Introduction to ALDS**

Core topics in applied linguistics and discourse studies. First and second language acquisition; sign language; language teaching and assessment; language in society; language, identity and power; discourse analysis; written language and literacy.

Lectures three hours a week.

ALDS 2201 [0.5 credit]**Analysis of Oral Language Use**

Introduction to the analysis of oral language in use; distinctions between spoken and written language; theoretical and methodological approaches such as speech act theory, ethnography of communication, conversation analysis, and discourse analysis; classroom interaction; interaction in first- and second-language acquisition; analysis of spoken language corpora.

Includes: Experiential Learning Activity

Prerequisite(s): ALDS 1001 or permission of the instructor.

Lectures three hours a week.

ALDS 2202 [0.5 credit]**Analysis of Written Language Use**

Introduction to the analysis of written language in use, including theoretical and methodological approaches such as rhetorical genre studies (including academic and workplace writing); adult literacy studies; text-structure analysis; discourse analysis (including critical discourse analysis); analysis of textual corpora.

Includes: Experiential Learning Activity

Prerequisite(s): ALDS 1001 or FYSM 1004 or ENGL 1000 or COMS 1000 or COMS 1001 or permission of the instructor.

Lectures three hours a week.

ALDS 2203 [0.5 credit]**Linguistic Theory and Second-Language Learning**

Critical study of linguistic theory and description applied to second-language learning; a brief consideration of similarities and differences in first- and second-language development, bilingualism and types of linguistic error and their significance.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures three hours a week.

ALDS 2604 [0.5 credit]**Communication Differences and Disabilities I**

A survey course highlighting a variety of communication differences and disabilities. Specific topics vary from year to year but typically will include speech, language, fluency and hearing differences and disabilities.

Also listed as LING 2604.

Prerequisite(s): second-year standing, or permission of the instructor.

Lectures three hours a week.

ALDS 2704 [0.5 credit]**Bilingualism**

The linguistic nature of bilingualism. The structure of bilingual societies and the relation between societal and individual bilingualism. The role of bilingualism in language education.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures three hours a week.

ALDS 2705 [0.5 credit]**Language and Power**

How social conditions engender different linguistic choices. Attention to linguistic resources for expressing ideological beliefs and for maintaining and reinforcing power structures in institutional and social sites.

Includes: Experiential Learning Activity

Precludes additional credit for FYSM 1205.

Prerequisite(s): second-year standing.

Lectures three hours a week.

ALDS 3201 [0.5 credit]**Cross-Cultural Communication**

Introduction to cross-cultural communication in social, academic and professional settings. Application of theoretical perspectives to case study analysis; pedagogical/training topics as relevant to students' disciplines; collaborative work with other language and cultural groups as feasible.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, and one of LING 1001 or ALDS 1001, or permission of the School.

Lectures three hours a week.

ALDS 3202 [0.5 credit]**Sociolinguistics**

The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.

Also listed as LING 3702.

Precludes additional credit for ALDS 2701 (no longer offered).

Prerequisite(s): ALDS 1001 and third-year standing.

Lectures three hours a week.

ALDS 3205 [0.5 credit]**English as a Global Language**

The origins, development and globalization of the English language. Establishment of Standard English; spread of English in the Inner circle and in expanding circles; world Englishes; linguistic features of English varieties. English as a global language; learning and teaching English as an international language.

Includes: Experiential Learning Activity

Prerequisite(s): ALDS 1001 and LING 1001.

Seminars three hours a week.

ALDS 3301 [0.5 credit]**Introduction to Deaf Studies**

A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond.

Includes: Experiential Learning Activity

Also listed as DBST 3301.

Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A, if taken in Fall term 2016.

Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies.

Seminars three hours a week.

ALDS 3401 [0.5 credit]**Research and Theory in Academic Writing**

Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.

Includes: Experiential Learning Activity

Also listed as ENGL 3908.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ALDS 3402 [0.5 credit]**Research and Theory in Workplace Writing**

Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.

Includes: Experiential Learning Activity

Also listed as ENGL 3909.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ALDS 3405 [0.5 credit]**Second Language Writing**

Theory and practice of second language (L2) writing: how people learn to write in a second language, and how L2 writing courses for specific groups of learners can be designed.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 3414 [0.5 credit]**Introduction to Professional Writing and Editing**

The fundamental skills of professional writing and editing, including writing for specific audiences, document design, revision strategies, copyediting.

Also listed as ENGL 3414.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week.

ALDS 3604 [0.5 credit]**Communication Differences and Disabilities II**

An in-depth examination of select topics in the field of communication differences and disabilities. An emphasis is placed on theoretical accounts of specific differences and disabilities and the cross-linguistic evidence for these accounts. Specific topics may vary from year to year.

Also listed as LING 3604.

Prerequisite(s): LING 1001 and one of ALDS 2604 or LING 2604.

Lectures three hours a week.

ALDS 3701 [0.5 credit]**Corpus Linguistics**

Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.

Includes: Experiential Learning Activity

Also listed as LING 3701.

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 3705 [0.5 credit]**Adult Literacy**

The extent and social contexts of restricted literacy in Canadian society; approaches to and debates surrounding the teaching and learning of adult literacy.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ALDS 3706 [0.5 credit]**Discourse Analysis**

Principles of and studies in discourse analysis, including both conversational and textual/documentary analysis.

The major focus is on language use in structuring social relationships.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 3801 [0.5 credit]**Beyond the BA**

Students explore personal and professional transitions from undergraduate to entering the workforce or graduate school. Topics may include self-assessments, career management skills, and networking. Both academic and practical work, featuring interaction from career specialists, graduate schools, professionals, and employed ALDS graduates.

Includes: Experiential Learning Activity

Precludes additional credit for ALDS 3903C, if taken in Winter 2019; ALDS 3903B, if taken in Fall 2020 or Fall 2021.

Prerequisite(s): Third-year standing in ALDS or LING or permission of the School.

Seminars three hours a week.

ALDS 3900 [1.0 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

ALDS 3901 [0.5 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Applied Linguistics and Discourse Studies.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

ALDS 3903 [0.5 credit]**Special Topic in Applied Linguistics and Discourse Studies**

Selected topics in Applied Linguistics and Discourse Studies not ordinarily treated in the regular course program.

Lectures three hours per week.

ALDS 4201 [0.5 credit]**Language Testing**

The principles of test construction as applied to testing language proficiency, achievement and aptitude. Structural, notional, discrete point and integrative tests. Diagnostic assessment of language development, language disorders, and literacy. Students are expected to create, analyze and evaluate language tests.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 4203 [0.5 credit]**Methods and Practice in Language Pedagogy**

Integrates theory and description of language learning and teaching with practical work in one of the languages offered by the School. Requires observation in a language classroom, along with practical work facilitating in-class or language lab activities, or developing teaching materials.

Includes: Experiential Learning Activity

Precludes additional credit for ALDS 3803 (no longer offered).

Prerequisite(s): permission of the language instructor for the language class in which practical work will be conducted; proficiency in the language in question, as determined by either completion of the prerequisites for 4010 of that language, or assessment by the language instructor; or permission of the School.

Seminars and in-class practicum.

ALDS 4206 [1.0 credit]**Practicum in Teaching ESL**

Investigates the processes of classroom learning with observation and some teaching experience in ESL classes. Normally taken concurrently with ALDS 4305 and ALDS 4306.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the concurrent CTESL program, or enrolment in the post-graduate CTESL program.

ALDS 4207 [0.5 credit]**ESL Literacy**

The nature of everyday literacy and literacy skills. Analyzing the structure of everyday literacy texts and demands. Issues in literacy for second-language learners.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 4208 [0.5 credit]**Languages for Specific Purposes**

An introduction to Languages for Specific Purposes - language instruction tailored to specific groups of learners, e.g. English for Science, for Business, for the Workplace, for Academic Purposes. Research and teaching methodology. Emphasis on EAP/ESP research and instruction at Carleton.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Also offered at the graduate level, with different requirements, as ALDS 5208, for which additional credit is precluded.

Lectures three hours a week.

ALDS 4209 [0.5 credit]**Teaching English as a Foreign Language: Methodology for Global Contexts**

An introduction to the principles of teaching language in a foreign-language context; review of teaching approaches; practical examination, development and evaluation of instructional materials.

Includes: Experiential Learning Activity

Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, the BGIInS Specialization in Teaching English in Global Contexts, or permission of the instructor.

Lectures three hours a week.

ALDS 4305 [0.5 credit]**Teaching English Language: Methodology I**

Classification of classroom teaching methods and materials; adaptation of teaching materials for particular situations; creation of teaching materials; teaching techniques and strategies.

Includes: Experiential Learning Activity

Precludes additional credit for ALDS 4205.

Prerequisite(s): fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or the BGIInS Specialization in Teaching English in Global Contexts, or permission of the instructor.

Seminars four hours a week.

ALDS 4306 [0.5 credit]**Teaching English as a Second Language: Methodology II**

Classification of classroom teaching methods and materials used in an international context; adaptation of teaching materials for particular situations; creation of teaching materials for global English language education; teaching techniques and strategies.

Includes: Experiential Learning Activity

Precludes additional credit for ALDS 4205.

Prerequisite(s): ALDS 4305 and fourth-year standing in the concurrent CTESL program, enrolment in the post-graduate CTESL program, or permission of the instructor.

Seminars four hours a week.

ALDS 4308 [0.5 credit]**English for Specific Purposes**

An introduction to English for Specific Purposes – English language instruction tailored to specific groups of learners (e.g., English for Academic Purposes, and English for a range of specific occupational and professional purposes). This course explores effective practices in course and materials design.

Prerequisite(s): ALDS 2203 or ALDS 4602 and third-year standing in the BGIInS Honours Specialization in Teaching English in Global Contexts, or enrolment in the CTESL program, or permission of the instructor.
Seminars three hours a week.

ALDS 4403 [0.5 credit]**Writing and Knowledge-Making in the Disciplines**

The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.

Includes: Experiential Learning Activity
Also listed as ENGL 4909.
Prerequisite(s): third-year standing.
Lectures three hours a week.

ALDS 4404 [0.5 credit]**Writing and Knowledge-Making in the Professions**

The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. How the goals, values, and assumptions of different professions shape their writing in distinctive ways and the implications for theory, research, and practice.

Includes: Experiential Learning Activity
Also listed as ENGL 4004.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week.

ALDS 4405 [0.5 credit]**Teaching Writing in School and the Workplace**

Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching.

Includes: Experiential Learning Activity
Also listed as ENGL 4515.
Prerequisite(s): third-year standing, or permission of the instructor.
Lectures three hours a week.

ALDS 4414 [0.5 credit]**Professional Writing I**

The role of writing in government and NGOs. Consideration of various genres, practices and styles of government and NGO writing, including, grant proposals, administrative reports, press releases, briefing notes, recommendation reports.

Includes: Experiential Learning Activity
Also listed as ENGL 4414.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week. May include a work placement.

ALDS 4415 [0.5 credit]**Professional Writing II**

The role of writing in science-related fields and in the health professions. Consideration of various genres, practices and styles of scientific and health-related writing, including, research reports, grant proposals, case reports, popularizations of science, press releases.

Includes: Experiential Learning Activity
Also listed as ENGL 4415.
Prerequisite(s): third-year standing or permission of the instructor.
Seminars three hours a week. May include a work placement.

ALDS 4602 [0.5 credit]**Second Language Acquisition**

Current issues in second language acquisition; factors influencing success in acquiring a second or additional language, discourse and culture. Emphasis on theoretical concepts, empirical research, and practical implications for language teaching.

Includes: Experiential Learning Activity
Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.
Lectures three hours a week.

ALDS 4606 [0.5 credit]**Statistics for Language Research**

Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.

Includes: Experiential Learning Activity
Also listed as LING 4606.
Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.
Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.
Also offered at the graduate level, with different requirements, as ALDS 5604 and LING 5606, for which additional credit is precluded.
Seminars three hours a week.

ALDS 4709 [0.5 credit]**Systemic-Functional Linguistics**

Functions of language in the exchange of meanings between people in a wide variety of communicative situations. Semantic and syntactic resources at risk in these different contexts. Interactions between language and the social context.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or Linguistics, or Journalism, or Communication Studies, or permission of the instructor.

Also offered at the graduate level, with different requirements, as ALDS 5102, for which additional credit is precluded.

Lectures three hours a week.

ALDS 4801 [0.5 credit]**Major Structures of English**

This course is intended to familiarize students with the structure of the English language, highlighting important contrasts between English and other languages as well as grammatical difficulties for ESL learners.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

ALDS 4900 [1.0 credit]**Independent Study**

Permits fourth-year Honours students to pursue their interests in a selected area of applied linguistics and discourse studies.

Prerequisite(s): permission of the instructor.

ALDS 4901 [0.5 credit]**Independent Study**

Permits fourth-year Honours students to pursue their interests in a selected area of applied linguistics and discourse studies.

Prerequisite(s): permission of the instructor.

ALDS 4906 [0.5 credit]**Special Topic in Applied Linguistics and Discourse Studies**

Selected topics in applied linguistics and discourse studies. Contents of this course vary from year to year.

Lectures three hours a week.

ALDS 4908 [1.0 credit]**Honours Project in Applied Linguistics and Discourse Studies**

Individually designed intensive practicum or research experience. May involve (a) practicum or work study placement in writing or literacy studies, language syllabus design or test development; (b) intensive research activity in an area of Applied Linguistics and Discourse Studies.

All projects include substantial written work.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Applied Linguistics and Discourse Studies, a CGPA of 9.00 or better, or permission of the School.

Tutorial hours arranged.

Arabic (ARAB)

Arabic (ARAB) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ARAB 1110 [1.0 credit]**Intensive First-Year Arabic**

For students with no knowledge of Arabic. Oral skills, reading and writing. Compulsory attendance. Eight hours a week (one term).

ARAB 2110 [1.0 credit]**Intensive Second-Year Arabic**

Further study of Arabic to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Prerequisite(s): grade of C or higher in ARAB 1110 or permission of the School. Eight hours a week (one term).

ARAB 3010 [0.5 credit]**Third-Year Arabic I**

Further study of Arabic to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in ARAB 2110, or permission of the School.

Three hours a week.

ARAB 3015 [0.5 credit]**Arabic for Heritage Speakers**

For students who have attained Arabic proficiency in an informal setting, this course provides an opportunity to build on their existing language skills and to develop them in a formal academic setting. The course will formalize grammar awareness and enhance Arabic literacy skills. Precludes additional credit for 1000- and 2000-level Arabic courses, and for ARAB 3010.

Prerequisite(s): permission of the School.

Three hours a week.

ARAB 3020 [0.5 credit]**Third-Year Arabic II**

Continuation of third-year Arabic to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in ARAB 3010 or ARAB 3015, or permission of the School.

Three hours a week.

Archaeology (ARCY)

Archaeology (ARCY) Courses**ARCY 1008 [0.5 credit]****Introduction to Archaeology I**

Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater.

Also listed as CLCV 1008.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week

ARCY 1009 [0.5 credit]**Introduction to Archaeology II**

Continues the examination of various aspects of field archaeology begun in ARCY 1008 (also CLCV 1008). This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches.

Also listed as CLCV 1009.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week.

ARCY 3000 [0.5 credit]**Archaeological Field Work I**

Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey). They will learn archaeological documentation and the analysis, recording, and processing of finds. The field project may be anywhere in the world and any time period.

Includes: Experiential Learning Activity

Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.

Field work

ARCY 3301 [0.5 credit]**Field Work I: Greek and Roman World**

Students will participate for a minimum of three weeks on an archaeological field project (ie. excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.

Includes: Experiential Learning Activity

Also listed as CLCV 3301.

Prerequisite(s): ARCY 1008 and ARCY 1009 or CLCV 1008 and CLCV 1009 or CLCV 2300 (no longer offered) and permission of the unit. Permission of the unit is required to repeat this course.

Field work

ARCY 4000 [0.5 credit]**Field Work II: Greek and Roman World**

Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.

Includes: Experiential Learning Activity

Also listed as CLCV 4000.

Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.

Field Work

ARCY 4100 [0.5 credit]**Archaeological Field Work II**

Students participate for a minimum of three weeks in a position of responsibility on an archaeological field project (eg. trench supervisor or lab assistant). The field project may be anywhere in the world and any time period.

Includes: Experiential Learning Activity

Prerequisite(s): 0.5 credit in fieldwork at third year level and permission of the unit. Permission of the unit is required to repeat this course.

Field work

Architectural Conservation and Sustainability Engineering (ACSE)

Arch. Conservation and Sustainability Eng. (ACSE) Courses

ACSE 3201 [0.5 credit]

Introduction to Building Performance Simulation

Modelling and simulation to support design, retrofit, rehabilitation of new and existing buildings on performance - energy, comfort, emissions; from basics of numerical modelling to parametric design techniques.

Includes: Experiential Learning Activity

Prerequisite(s): Third-year status in B.Eng. Architectural Conservation and Sustainability Engineering, Environmental Engineering or Civil Engineering, or fourth-year standing in B.A.S. concentration in Conservation and Sustainability.

Lecture 3 hours per week, computer lab/problem analysis 3 hours every other week

ACSE 4101 [0.5 credit]

Introduction to Structural Assessment of Historic Masonry Buildings

History of conservation and restoration; types of historic buildings and structural components; mechanical properties and mechanics of masonry constructions; thrust line analysis; masonry buildings, structural walls, seismic damage, basic concepts, and design of masonry structures.

Includes: Experiential Learning Activity

Prerequisite(s): CIVE 2200, CIVE 2700.

Lecture 3 hours per week, lab/problem analysis 3 hours every other week

Architecture - Design Studios/Design Thesis/Research (ARCS)

Architecture - Studio (ARCS) Courses

ARCS 1005 [0.5 credit]

Drawing

Free-hand drawing as a way of observing and understanding the world. Various media and techniques introduced through a wide range of studio and outdoor exercises. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A.S. program.

Six hours a week.

ARCS 1105 [1.0 credit]

Studio 1

Students from all BAS majors are introduced to the fundamentals of designing for the built environment using the conventions of varied modes of analog representation and physical making. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A.S. program.

Studio eight hours per week.

ARCS 2105 [1.5 credit]

Studio 2

Supported by the core curriculum, focuses on small-scale building in a local context. Using analog methods, projects introduce the integration of basic structure and building systems while furthering fundamental concepts such as space, inhabitation, and materiality. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 1005 and ARCS 1105.

Twelve hours studio, plus one hour lecture per week.

ARCS 2106 [1.5 credit]

Studio 3

With a focus on small to medium scale building projects, projects consider analog and digital methods to advance consideration of site, program, and the materials as the means for shaping the built environment. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 1005 and ARCS 1105.

Twelve hours studio, plus one hour lecture per week.

ARCS 2302 [1.0 credit]

Conservation Studio 1

Conservation methodologies will be tested and studied through design exercises and historical research on existing architectures, cities and landscapes. The emphasis on the understanding and the relation with the setting will be essential.

Includes: Experiential Learning Activity

Prerequisite(s): ARCC 3502, ARCS 1005, ARCS 1105 and second-year standing in B.A.S. major Conservation and Sustainability or permission of the School.

Eight hours studio per week.

ARCS 2303 [1.0 credit]

Urbanism Studio 1: Fundamentals of Urbanism

Through readings, discussions and projects, students will examine a number of the forces that produce the built environment and explore a variety of approaches to documenting, representing, analyzing, organizing and controlling the growth, shape, density, and mix of uses associated with cities.

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 2303 (no longer offered), ARCU 3501 (no longer offered).

Prerequisite(s): ARCS 1005 and ARCS 1105, or permission of instructor.

Eight hours studio, plus one hour lecture per week.

ARCS 2304 [1.0 credit]**Urbanism Studio 2: Urbanism in the Core**

Intensification, revitalization, gentrification, brownfield redevelopment, sustainability, development standards, form-based codes, and the larger impact of migration on urban density. Through design, students explore the ramifications of practices, policies, pressures, processes and cultural preferences on the evolving form and function of the urban core.

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 3303 (no longer offered).

Prerequisite(s): ARCS 1105, and third-year standing in B.A.S. Urbanism major or permission of the School.

Eight hours studio, plus one hour lecture per week.

ARCS 3105 [1.5 credit]**Studio 4**

Supported by the core curriculum, focuses on a medium-scale building within a regional context. May include a small design-build. Projects further analog and digital methods. May introduce concepts like adaptive re-use while furthering the understanding of structure and building systems in a complex building. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 2105 and ARCS 2106.

Twelve hours studio, plus one hour lecture per week.

ARCS 3107 [1.0 credit]**Studio 5**

The Directed Studies Abroad (DSA) studio considers large-scale, mixed-use buildings in an international context. Design projects advance analog and digital methods to explore broader cultural and social conditions within a complex site often in conjunction with a site visit abroad. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 3106 (no longer offered).

Prerequisite(s): ARCS 2105 and ARCS 2106.

Eight hours studio, plus one hour lecture per week.

ARCS 3301 [1.0 credit]**Conservation Studio 2**

Historical building projects exploring architecture as a form of cultural expression. Consideration of site, program and materials. Introduction of conservation, sustainability and adaptive re-use principles, development standards, architectural codes, using case studies in Ottawa and elsewhere. Physical, digital drawings and models to explore designs. (Core).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3301 (no longer offered).

Prerequisite(s): ARCC 3502, ARCS 2302 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Studio eight hours per week.

ARCS 3302 [1.0 credit]**Conservation Studio 3**

The role of architecture in culture, stressing site and program with respect to their historic, social and ecological implications. Synthesis of issues, methods and techniques of the conservation and sustainability curriculum. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3302 (no longer offered).

Prerequisite(s): ARCS 3301 and third-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Studio eight hours per week.

ARCS 3304 [1.0 credit]**Urbanism Studio 3: Urbanism on the Periphery**

Urbanization, sprawl, growth models, land consumption, containment strategies (smart growth, greenbelts, growth boundaries), edge cities, the Just City, Ecological Urbanism, and informal suburbanization in developed and developing countries. Through design, students explore the impact of practices, pressures, processes and cultural preferences on the expanding city.

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 3304 (no longer offered).

Prerequisite(s): ARCS 2303 and ARCS 2304 and third-year standing in B.A.S. Urbanism major or permission of the School.

Eight hours studio, plus one hour lecture per week.

ARCS 3306 [1.0 credit]**Urbanism Studio 5: Global Perspectives**

Urbanization as a global phenomenon. Study of various forms of urbanization and de-urbanization in relation to economic, political and cultural forces. Through design, students explore the (trans)formation of settlements and communities outside of the North American context.

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 4304 (no longer offered).

Prerequisite(s): ARCS 2303 and ARCS 2304 and third-year standing in B.A.S. Urbanism major or permission of the School.

Eight hours studio, plus one hour lecture per week.

ARCS 4105 [1.5 credit]**Comprehensive Studio**

Focussing on multi-unit housing, students from BAS majors collaborate to develop strategies for redevelopment of large urban sites. Engages urban design, site planning, programming, adaptive reuse, and community consultation. Students produce detailed designs for buildings, emphasizing building systems and envelope design. (Core Course).

Includes: Experiential Learning Activity

Prerequisite(s): ARCS 3105 and ARCS 3107, or ARCS 3303 and ARCS 3304.

Twelve hours studio, plus one hour lecture per week.

ARCS 4107 [1.0 credit]**Option Studio**

Offers a range of topics for exploration. Students use analog and digital methods and techniques to culminate the undergraduate studio sequence while offering focused research-led investigation into key social, political, spatial issues. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCS 4106 (no longer offered).

Prerequisite(s): ARCS 3105 and ARCS 3107.

Eight hours studio, plus one hour lecture per week.

ARCS 4301 [1.5 credit]**Conservation Studio 4**

Issues of program and site as the culturally defining aspects of sustainable architectural practice within complex urban and social situations, using difficult sites, historically significant buildings and/or locations and hybrid programs. projects brought to a high degree of formal and graphic resolution. (Core Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 4301 (no longer offered).

Prerequisite(s): ARCS 3302 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Twelve hours studio and one hour of lecture per week.

ARCS 4302 [1.0 credit]**Conservation Studio 5**

Conservation decision-making process and contemporary conservation concepts in the development of a design for the adaptive reuse, in Ottawa and elsewhere.

Consideration of sustainability aspects, site, program, and materials.

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 4302 (no longer offered).

Prerequisite(s): ARCS 4301 and fourth-year standing in B.A.S. Conservation and Sustainability major or permission of the School.

Studio eight hours per week.

ARCS 4303 [1.5 credit]**Urbanism Studio 4: Housing**

Housing as it affects urban form. The design of multi-unit housing in a variety of forms and for a range of demographic groups. After thorough research of applicable codes and bylaws, students engage the design of housing at the site, building and detail level.

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 4303 (no longer offered).

Prerequisite(s): ARCS 3303 and ARCS 3304 and fourth-year standing in B.A.S. Urbanism major or permission of the School.

Studio twelve hours per week and one hour lecture.

Architecture - Technical (ARCC)

Architecture - Technical (ARCC) Courses**ARCC 1202 [0.5 credit]****History of Structures**

A survey of the history, theory, and science of structures pertaining to buildings and civic works. Structural systems, construction techniques, materials and details, and the cultural factors involved in the synthesis of traditional structural design.

Includes: Experiential Learning Activity

Prerequisite(s): registration in B.A.S.

Lectures three hours a week, laboratory is block scheduled.

ARCC 2001 [0.5 credit]**Structures in Architecture**

Survey of structural planning, including a historical survey of structural systems, details and the study of the factors involved in the synthesis of a suitable structural scheme.

The course is intended as a survey of the science and the structural properties of materials. (Elective Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 1103.

Lectures three hours a week, laboratory is block scheduled.

ARCC 2100 [0.5 credit]**Design and the Environment**

Examines varied methods and techniques to understand the people, places, and potentials of landscapes with a focus on equity and an ethics of care for social and physical environments.

Prerequisite(s): Second-year standing or permission of the School.

Lecture three hours per week

ARCC 2202 [0.5 credit]**Architectural Technology 1**

General introduction to materials and methods of construction with focus on wood and timber frame construction. Site conditions, foundations, structure and envelope design in terms of their response to local climate: sun (light and heat) wind, moisture. (Core course).

Prerequisite(s): permission of the School.

Lectures three hours a week.

ARCC 2203 [0.5 credit]**Architectural Technology 3**

Wood frame, post and beam, steel and concrete systems and construction techniques. Structural systems and building envelope principles and practise are explored in conjunction with mechanical and electrical systems in smaller buildings. Emphasis on precedent, tradition and methodology of architectural detailing for construction.

Includes: Experiential Learning Activity

Prerequisite(s): ARCC 2202 and third-year standing for B.A.S. students and third-year standing for students in B.Eng. Architectural Conservation and Sustainability.

Lectures three hours a week.

ARCC 3004 [0.5 credit]**Workshop: Energy and Form**

Relationship between environmental factors, energy and architectural form. Ways in which buildings and building elements can be planned and designed to take advantage of natural cycles in order to minimize the need for supportive energy inputs. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCC 3202 [0.5 credit]**Architectural Technology 4**

Medium scale steel, concrete, and wood frame buildings as case studies to explore approaches to building science principles, building envelope design, advanced construction methods and materials, acoustics and sound control, and fire protection. Focus on sustainable design strategies and environment impact. (Core course).

Prerequisite(s): ARCC 2203 and third-year standing for B.A.S. students or ARCC 2203 and third-year standing for students in B.Eng. Architectural Conservation.

Lectures three hours a week.

ARCC 3305 [0.5 credit]**Materials Application**

Application of building materials, including the forming of building parts and the design of joints for performance and assembly. Practical constructions using new technology are emphasized. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCC 3502 [0.5 credit]**Introduction to Architectural Conservation**

Introduces conservation concepts to understand the values associated with existing buildings and landscapes. Through the analysis of sites and case studies, students will discuss the potentials and limitations of architectural conservation, as well as, testing its possibilities for sustainable retrofitting practices.

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3501 (no longer offered).

Lectures three hours per week

ARCC 3902 [0.5 credit]**Architectural Technology**

A specific aspect of architecture in the area of architectural technology. Offerings vary from year to year. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCC 4100 [0.5 credit]**Lighting for Architecture**

A study of daylighting and/or lighting design techniques, with a focus on project-based learning. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): ARCC 2203 or permission of the School.

Lecture, seminar, workshop or field work six hours a week.

ARCC 4102 [0.5 credit]**Acoustics in Architecture**

Sound in enclosures, including interior design of auditoria and special applications. Sound reproduction and reinforcement systems. Acoustic privacy and protection, sound control in buildings, materials for noise control, community noise, industrial noise. Acoustic measurements and instrumentation. (Elective Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 3002.

Lectures two hours, laboratory two hours a week.

ARCC 4103 [0.5 credit]**Energy and Form**

Energy as a criterion in decision-making for architectural design. Conventional energy resources and state-of-the-art alternative energy resource systems with respect to building shape, size, materials, openings, orientation, siting, and use. (Elective Course).

Precludes additional credit for ARCC 3003.

Lectures three hours a week.

ARCC 4200 [0.5 credit]**Structural Morphology**

Interdisciplinary study of structural and developmental morphology focusing on dynamic generative design processes, integrative systems, spatial modulations and fundamental generative principles of spatial form and structure as it relates to architecture. (Workshop).

Includes: Experiential Learning Activity

Lectures, seminar, workshop or field work six hours a week.

ARCC 4202 [0.5 credit]**Wood Engineering**

Introduction to structural design in timber. Properties, anatomy of wood, wood products, factors affecting strength and behaviour, strength evaluation and testing. Design of columns, beams and beam-columns. Design of trusses, frames, glulam structures, plywood components, formwork, foundations, connections, connectors. Inspection, maintenance and repair. (Elective course).

Prerequisite(s): CIVE 2200, CIVE 2700.

Lectures three hours a week, problem analysis three hours alternate weeks.

ARCC 4207 [0.5 credit]**Advanced Building Assessment**

In-depth study of the conventions, methods, and tools used in the assessment of buildings and their sties including traditional field survey, photogrammetry, laser scanning technologies, and hybrid representations.

Includes: Experiential Learning Activity

Precludes additional credit for ARCC 4900 (no longer offered).

Prerequisite(s): enrolment in the BAS Conservation and Sustainability program and fourth-year standing.

Laboratories, lectures, field trips, six hours a week.

ARCC 4300 [0.5 credit]**Building Materials**

Contemporary and traditional construction techniques and materiality are discussed within the framework of current practices, with emphasis on the analysis of material properties, structure and sustained performance, as well as their contribution to the adaptive reuse of existing and/or historical building. (Elective Course).

Includes: Experiential Learning Activity
Precludes additional credit for ARCC 3300.
Laboratories, lectures, field trips four hours a week.

ARCC 4400 [0.5 credit]**Design for Construction**

Design in relation to materials and building construction including the effects of building codes, zoning bylaws, approvals, processes and legislation, the organization of the building industry, and cost estimating control. (Elective Course).

Includes: Experiential Learning Activity
Prerequisite(s): ARCC 3300 or permission of the School.
Lectures, seminars, field work three hours a week.

ARCC 4500 [0.5 credit]**Design Economics**

Principles of building economics. Determinants and prediction of building costs. Uncertainty and investment economics. Creative cost control for buildings during schematic design, design development, construction document preparation and construction. Economic evaluation during all phases of design process; emphasis on sustainable strategies.

Precludes additional credit for ARCC 3500.
Prerequisite(s): fourth-year standing in the B.A.S. program or permission of the School.
Three hours a week.

ARCC 4801 [0.5 credit]**Architectural Technology**

A specific aspect of architecture in the area of architectural technology. Topics vary from year to year. (Elective Course).

Prerequisite(s): permission of the School.

ARCC 4808 [0.5 credit]**Independent Study**

(Elective Course).

ARCC 4909 [1.0 credit]**Honours Project**

Students propose a topic of study in Conservation & Sustainability for approval and produce a substantial research project, supervised by BAS faculty. (Core Course).

Includes: Experiential Learning Activity
Prerequisite(s): fourth-year standing in BAS (Conservation and Sustainability).

Architecture - Techniques (ARCN)

Architecture - Techniques (ARCN) Courses**ARCN 1005 [0.5 credit]****Introduction to Drawing: Seeing Through the Hand**

Fundamental concepts of line and line weight, light and shadow, perspective, contrast and composition. Exercises will include some mixed media and will introduce students to drawing as a way of translating ideas into images.

Includes: Experiential Learning Activity
One hour lecture and two hours drawing/discussion.

ARCN 2105 [0.5 credit]**Introduction to Computer Modeling**

Computer modeling as a medium of architectural analysis, documentation, and presentation. Principles and techniques of 2D drawing and 3D modeling. Extensive practical work using appropriate applications. (Core Course).

Includes: Experiential Learning Activity
Three hours lecture and three hours lab per week

ARCN 2106 [0.5 credit]**Introduction to Multimedia**

Analogue and digital systems and graphic processes used in the making of images. Fundamentals of still photography and videography combined with current computer technologies in the application of visual communication techniques.

Includes: Experiential Learning Activity
Precludes additional credit for IDES 2106.
Lectures three hours a week, laboratory three hours a week.

ARCN 3003 [0.5 credit]**Theatre Production**

Design and fabrication of theatre productions, one of which is staged on campus. Visiting directors, designers, technical consultants and others. Visits to theatres and production facilities. (Workshop).

Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3206 [0.5 credit]**Computer Applications**

Application of existing software and programming techniques to various architectural problems. (Workshop).

Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3302 [0.5 credit]**The Anatomy of Architecture**

The architectural anatomy of selected contemporary buildings. Use of graphic techniques of analysis to develop an understanding of their basic compositional principles and language. (Workshop).

Includes: Experiential Learning Activity
Prerequisite(s): permission of the School.
Lecture, seminar, lab or field work six hours a week.

ARCN 3303 [0.5 credit]**Architecture as Painting**

Analysis of architecture for its elemental, formal and narrative properties. These relationships through the medium of painting. Architecture as analogy to painting. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3400 [0.5 credit]**Visual Design**

Development of the capacity to visualize and communicate in several graphic media. Development of sensitivity to form, structure, space, texture and colour. May involve historical investigation. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3401 [0.5 credit]**Photography**

Traditional and alternative techniques for image making and manipulation. Basic image formation techniques, advanced darkroom manipulations, past-darkroom imaging, and digital imaging within a theoretical overview of current photographic processes and techniques. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ARCN 4100 [0.5 credit]**Historic Site Recording and Assessment**

Methods of heritage building documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.

Includes: Experiential Learning Activity

Also listed as CIVE 3207.

Precludes additional credit for ARCN 3100 (no longer offered).

Prerequisite(s): second-year standing in B.A.S.

Conservation and Sustainability.

Lectures three hours a week, lab or field work two hours a week.

ARCN 4102 [0.5 credit]**Problems in Computing**

Various types of non-numeric data, their representation within primary and secondary storage, and the manipulation of various representations. Comparative evaluation of languages for non-numeric problems. (Elective Course).

Includes: Experiential Learning Activity

Precludes additional credit for ARCN 3102.

Prerequisite(s): permission of the School.

Lectures two hours a week, laboratory two hours a week.

ARCN 4103 [0.5 credit]**Digital Fabrication and Theory**

The changing relationship of architectural design and digital technology with a focus on 1:1 constructions using emerging computational software and fabrication techniques. (Workshop/Elective Course).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lectures two hours a week, laboratory two hours a week.

ARCN 4200 [0.5 credit]**Building Pathology and Rehabilitation**

Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures.

Includes: Experiential Learning Activity

Also listed as CIVE 4601.

Prerequisite(s): ARCN 4100 and third-year standing in B.A.S. Conservation and Sustainability.

Lectures three hours a week, lab/field work two hours a week.

ARCN 4808 [0.5 credit]**Independent Study**

(Elective Course).

Includes: Experiential Learning Activity

Architecture - Theory/History (ARCH)

Architecture - Theory/History (ARCH) Courses

ARCH 1000 [0.5 credit]**Introduction to Architecture**

Architecture in the matrix of human conditions: linkages among architecture, fine arts, humanities, social sciences, physical sciences, mathematics and philosophy.

Architectural ideas will be introduced through a discussion of cities, buildings and landscapes. (Core Course).

Lectures three hours a week.

ARCH 1005 [0.5 credit]**Contemporary Society**

The relationship of architecture, architectural thought and the architectural profession to the societies in which they exist (and which they must serve). Topics are selected to emphasize key issues. (Elective Course).

Lectures and seminars, three hours a week.

ARCH 2006 [0.5 credit]**Theory and History of Design**

The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes. (Elective course).

Also listed as IDES 1000.

Lectures three hours a week.

ARCH 2101 [0.5 credit]**Industrial Design Analysis**

Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment. (Elective course).

Includes: Experiential Learning Activity

Also listed as IDES 1001.

Prerequisite(s): ARCH 2006 or IDES 1000.

Lectures three hours a week.

ARCH 2300 [0.5 credit]**Introduction to Modern Architecture**

Architectural and urban ideals of modernism with emphasis upon the development of the avant-garde in the early twentieth century. The phenomenon of modern architecture within the broader framework of the development of western thought. (Core Course).

Precludes additional credit for ARCH 3009.

Prerequisite(s): B.A.S. students require ARTH 1100 or ARTH 1200 and ARTH 1101 or ARTH 1201.

Lectures three hours a week.

ARCH 3208 [0.5 credit]**Urban Space Architecture**

Design explorations that are directed towards the search for aesthetic form and meaning in urban space, with particular application to the Canadian context. Project-oriented. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 3601 [0.5 credit]**Architectural Discourse I**

Examines ideas relevant to contemporary architectural discourses and practices focused on the development of critical thinking and communication skills situated in emerging inquiries within a longer lineage of existing architectural theory. (Core Course).

Prerequisite(s): Third-year standing or permission of the School.

Lecture 3 hours per week

ARCH 3902 [0.5 credit]**Theory of Architecture**

Workshop focuses on one specific aspect of architecture in the area of theory and history. Workshop offerings change from year to year. (Workshop).

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 4002 [0.5 credit]**Canadian Architecture**

Canadian architecture from the seventeenth century to the present. Building styles, methods, construction techniques, and materials in the context of social and economic conditions of both indigenous and settlement approaches to the built environment.

Includes: Experiential Learning Activity

Also listed as ARTH 3002.

Precludes additional credit for ARCH 3002.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures, seminars three hours a week.

ARCH 4004 [0.5 credit]**Architectural Theory**

An exploration of architectural intentions in the early period of Western history, with special emphasis on Renaissance treatises and ideas. Architectural intentions in relation to shifting world-views as a basis of historical interpretation. (Theory/History Elective).

Precludes additional credit for ARCH 3007.

Lectures three hours a week.

ARCH 4006 [0.5 credit]**Origins of Modernism**

Exploration of architectural theories with special emphasis on the European context from the seventeenth century to the late nineteenth century. (Theory/History Elective).

Precludes additional credit for ARCH 3008.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4008 [0.5 credit]**Foundations of Modernism**

Major critical perspectives as applied to architecture as a fine art. The debate between classicism and romanticism with consideration of its cultural roots. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4009 [0.5 credit]**Theory of the Avant-Garde**

Exploration of architectural theories with special emphasis on the development of the avant-garde in the early twentieth century, looking at the avant-garde within the larger framework of modernism. (Theory/History Elective).

Precludes additional credit for ARCH 3009.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4105 [0.5 credit]**Theories of Landscape Design**

Introduction to landscape architecture as the organization of outdoor space. Historical, cultural, economic and political factors as a basis for interpreting spatial organization in urban and rural areas of human settlement. Emphasis on the period from the fifteenth to the nineteenth century. (Theory/History Elective).

Prerequisite(s): second-year standing or above.

Lectures three hours a week.

ARCH 4200 [0.5 credit]**Architectural Conservation Philosophy and Ethics**

Analysis of philosophical theories and related approaches to the material transformation of buildings. Micro-histories in architectural conservation theory and practice; overview of historical and contemporary concepts in architectural conservation. Preservation, restoration, rehabilitation, reconstruction, adaptive re-use, conservation anamnesis, diagnosis.

Precludes additional credit for ARCH 3100 (no longer offered).

Prerequisite(s): ARCC 3502 and third-year standing in B.A.S.; OR third-year status in B.Eng. (Architectural Conservation and Sustainability).

Lectures three hours a week.

ARCH 4201 [0.5 credit]**History of Modern Housing**

Study of housing as a function of social organization, demographics, market demand and public policy. Topics include the evolution of housing form, the role of the state, and the participation of architects in the housing marketplace in the 19th and 20th century. (Theory/History Elective).

Prerequisite(s): third-year standing in the B.A.S. program or permission of the School.

Lectures three hours a week.

ARCH 4204 [0.5 credit]**The Design Professions**

Architecture and design professions in relation to traditional professions and to occupations in art and design. Professions in the development of culture and society; education, career and work; knowledge in the design professions; and the nature of design practice. (Elective Course).

Also listed as SOCI 4204.

Prerequisite(s): third-year standing in the B.A.S. program; fourth-year standing in Sociology; fourth-year standing in the B.A. Honours Architecture/Art History program; or permission of the School.

Seminar three hours a week.

ARCH 4205 [0.5 credit]**User-Building Synopsis**

Projects to develop skills in the analysis of building performance. Examination of occupancy analysis, safety and risk assessment, post-occupancy evaluation, and social impact assessment. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 4206 [0.5 credit]**Recycling Architecture in Canada and Abroad**

Concepts of mediating old and new architecture at the scale of the city through to the detail of the construction joint. Issues in sustainability and cultural identity illuminated by recycled architecture and adaptive reuse are explored through readings, drawings and case studies. (Theory/History Elective).

Prerequisite(s): third-year standing in the B.A.S. program or by permission of the instructor or fourth-year standing in the B.Eng. Architectural Conservation and Sustainability program.

Lectures three hours a week.

ARCH 4300 [0.5 credit]**Neo-Classical Architecture**

18 th - and 19 th- century architecture and urban form in Western Europe. Emphasis on the cultural and philosophical framework of rising modernity to illuminate architectural production and theory as well as the development of urban form. (Theory/History Elective).

Precludes additional credit for ARCH 1201 and ARCH 2200.

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4301 [0.5 credit]**Post-War Architecture**

Theoretical, ideological and artistic debates that have influenced the development of world architecture since 1950. (Theory/History Elective).

Also listed as ARTH 4604.

Prerequisite(s): ARCH 2300 or ARTH 3609 or permission of the instructor.

Lecture or seminar three hours per week.

ARCH 4302 [0.5 credit]**Pre-Columbian Architecture**

Monumental temples of the ancient Mesoamericans are compared with other world traditions at similar levels of cultural development. Selected examples considered in terms of morphology, technology, iconography, social/political context, world view and general architectural theory. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4303 [0.5 credit]**Greek Architecture**

Architecture of Greek antiquity and its relationship to its philosophical, artistic, and mythical contexts. The development of the idea of the city; the presence of architecture within its symbolic landscape. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4304 [0.5 credit]**The Architecture of Rome**

Rome in its classical to late-antique periods. Its founding mythologies and landscape. In-depth analysis of Rome, with special attention to its public buildings. Early Christian architecture within the Roman context. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4305 [0.5 credit]**Medieval Architecture**

Gothic architecture and its relation to its philosophic and artistic predecessors. Special attention to the coexistence of the monastic tradition, late Romanesque building, and new experiments in gothic during this period, marked by intellectual and political ferment. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4306 [0.5 credit]**Renaissance Theory**

The rise of architectural theory within the context of the Italian Renaissance. Canonic texts explored and compared in the context of the architectural developments of the period. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4307 [0.5 credit]**Muslim Architecture**

Historical and theoretical discussions about the architecture of Muslim cultures. Selected sites and monuments from eighth to eighteenth century, covering the vast geography from North Africa to Southeast Asia. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4308 [0.5 credit]**Asian Architecture**

Anthropological history of the architecture of the Near and Far East. The architecture and urban form of Ancient Egypt, Anatolia, Sumer and Persia; ancient China and India. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4309 [0.5 credit]**Mesoamerican Architecture**

Selected works of Mesoamerican architecture in terms of iconography, morphology, technology, function, historical development, and concept. Mesoamerican architectural features compared with other world traditions. Emphasis on design. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4400 [0.5 credit]**Theory**

A survey of the architectural and urban history of a specific culture. These discussions address the present reality of a country, region or city being visited by the fourth year of the program. (Elective Course).

Prerequisite(s): clear standing to fourth year and permission of the School.

Lectures three hours a week.

ARCH 4502 [0.5 credit]**Research and Criticism**

Preparation for the independent research and design work. Work related to the nature of research and criticism in architecture, with emphasis on current issues. (Theory/History Elective).

Includes: Experiential Learning Activity

Lectures and seminars three hours a week.

ARCH 4505 [0.5 credit]**Seminar in Theory and History**

History and theory of architecture. Topics will vary from year to year. Limited enrolment. (Elective Course).

Prerequisite(s): fourth-year standing in the B.A.S. or B.A. (Honours) Architecture/Art History programs, or permission of the School.

Lectures three hours a week.

ARCH 4601 [0.5 credit]**Architectural Discourse II**

Examines ideas and methods relevant to contemporary architectural discourse with a focus on cultural diversity and global perspectives. Architectural Discourse II builds on learned skills from previous work and acts as a preparatory course for research skills necessary at the graduate level. (Core Course).

Prerequisite(s): ARCH 3601 and fourth-year standing or permission of the School.

Lecture three hours per week.

ARCH 4801 [0.5 credit]**Special Topics**

An aspect of architecture in the area of theory and history. Topics vary from year to year. (Theory/History Elective).

Prerequisite(s): ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4808 [0.5 credit]**Independent Study**

(Elective Course).

ARCH 4900 [0.5 credit]**Directed Reading**

Supervised readings and research projects. Guidelines must be obtained from BAS Academic Advisors prior to registration. (Core course).

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism).

ARCH 4909 [1.0 credit]**Honours Project**

Students propose a topic of study in Philosophy and Criticism for approval and produce a substantial research project, supervised by BAS faculty. (Core course).

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.A.S (Philosophy and Criticism).

Architecture - Urban (ARCU)

Architecture - Urban (ARCU) Courses**ARCU 2100 [0.5 credit]****Special Topics in Urbanism**

Seminar in selected topics related to Urbanism at an introductory level.

Lecture and discussion three hours per week.

ARCU 3100 [0.5 credit]**The Morphology of the City**

Primary structural, spatial and formal organization and elements that characterize the morphology of cities; historical and contemporary significance for architecture and urban design. (Core).

Prerequisite(s): First-year standing in the B.A.S. Urbanism major, second or third-year standing in other B.A.S. majors, or permission of the School.

Lecture two hours a week and tutorial one hour a week.

ARCU 3203 [0.5 credit]**Landscape Architecture**

Practical significance of landscape elements as they relate to built-form by integrating structure and site. (Workshop).

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3405 [0.5 credit]**Urban Design**

Project-based workshop investigating current design attitudes and solutions affecting the physical morphology of cities. Formally sophisticated urban design projects.

Various procedures and basic urban design ideas.

(Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3409 [0.5 credit]**City Organization and Planning Processes**

Interdisciplinary investigation, analysis and synthesis of the institutions, processes, environments and demography of Canadian cities. Guest lecturers. (Workshop).

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3902 [0.5 credit]**Urban Studies**

A specific aspect of architecture in the area of urban studies. Topics vary from year to year. (Workshop).

Includes: Experiential Learning Activity

Precludes additional credit for ARCU 4103.

Prerequisite(s): permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 4103 [0.5 credit]**Cities**

Course addresses cities such as Istanbul, Mexico City, Venice, Paris, Ottawa, Mumbai, and New Orleans.

Topics presented by the instructor and guests include environmental resilience and climate change; social justice and informal settlement; smart cities and data privacy; and urban design, memory, and imagination.

Precludes additional credit for ARCU 3902.

Prerequisite(s): Second-year standing or permission of the Instructor.

Lecture two hours per week and tutorial one hour per week.

ARCU 4300 [0.5 credit]**Theories of Urbanism**

Contemporary urban theory and critical scholarship that engages evolving social, political, economic and environmental perspectives, addresses multiple scales, geographic contexts, and disciplinary boundaries, and investigates the expanding array of models, tools and techniques that have contributed to various theories of urbanism.

Prerequisite(s): ARCU 3100.

ARCU 4400 [0.5 credit]**City Organization and Planning**

Structure, form and functioning of cities. Infra-structure, facilities and networks, ecosystems, demographic and social organization, government, quality of life, goals and perceptions, urban management, development, regulation and codes, design, planning and policy-making. (Elective Course).

Precludes additional credit for ARCU 3400.

Three hours a week.

ARCU 4500 [0.5 credit]**Human Shelter**

Background factors pertaining to housing in both industrial and developing countries; traditional and contemporary housing approaches; social housing; and people's right to adequate housing. Guest lecturers. (Elective Course).

Precludes additional credit for ARCU 3500.

Three hours a week.

ARCU 4600 [0.5 credit]**Post-WWII Urbanism**

Urban renewal in the post-war period in response to housing shortages, suburbanization, transportation infrastructure and other factors. Gentrification and the emerging form of the post-industrial city, including new urbanism and sustainable communities. Case studies from Canada, Europe and the U.S. (Theory/History Elective). Prerequisite(s): ARCU 3100 and third or fourth-year standing in the B.A.S. Urbanism program or permission of the School.

Lectures three hours a week.

ARCU 4700 [0.5 credit]**Urban Utopias**

Urban utopias throughout history, with emphasis on the 20th century. Garden Cities, anti-urbanism and radical decentralization, the city in the region, Italian Rationalist cities, Le Corbusier and CIAM, post-WWII New Towns (England, Scandinavia and the US), Sustainable Urbanism.

Prerequisite(s): third or fourth-year standing in B.A.S. Urbanism program or permission of the School.

Lectures three hours a week.

ARCU 4801 [0.5 credit]**Topics in Urbanism**

Advanced seminar in selected topics related to urbanism. Topics may include histories and theories related to urban systems, design, and planning. (Core course). Prerequisite(s): third-year standing in B.A.S. (Urbanism) or permission of the Instructor.

Seminar three hours per week.

ARCU 4808 [0.5 credit]**Independent Study**

(Elective Course).

Includes: Experiential Learning Activity

ARCU 4901 [0.5 credit]**Topics in Applied Urbanism**

Advanced investigation into issues related to urbanism and urban form. Topics will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.A.S. (Urbanism) or permission of Instructor.

Lecture three hours per week.

Art and Architectural History (ARTH)

Art and Architectural History (ARTH) Courses**ARTH 1100 [0.5 credit]****Art and Society: Prehistory to the Renaissance**

A survey of art, architecture and artifacts from prehistory to the Renaissance. Ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1101 [0.5 credit]**Art and Society: Renaissance to the Present**

A survey of art, architecture and related visual forms in their expanding contexts from the Renaissance to the present. Ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1105 [0.5 credit]**Art as Visual Communication**

A variety of visual material is organized topically to examine the elements of art (line, shape, value, colour, texture, space), the principles of pictorial organization, the materials and techniques of art, and recurrent tendencies in artistic styles and outlooks.

Lectures three hours a week.

ARTH 1200 [0.5 credit]**History and Theory of Architecture: Prehistory to 1500**

An introduction to the history of architecture from prehistory to ca. 1500, considering technological, formal, intellectual and social developments that informed the built environment through a range of building types.

Lectures two hours a week, tutorial one hour a week.

ARTH 1201 [0.5 credit]**History and Theory of Architecture: 1500 to Present**

An introduction to the history of architecture from ca. 1500 to the present, considering technological, formal, intellectual, and social developments that informed the built environment through a range of building types.

Precludes additional credit for ARTH 2608 (no longer offered).

Lectures two hours a week, tutorial one hour a week.

ARTH 2002 [0.5 credit]**Historical Art in Canada**

A survey of historical art in Canada, from the seventeenth century to the early twentieth century. Topics may include craftwork, amateur and professional artists, art institutions, gender, nationalism, regionalism and ethnicity. Coverage will include artworks in local and national collections in the National Capital region.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2003 [0.5 credit]**Canadian Twentieth-Century and Contemporary Art**

A survey of twentieth-century and contemporary Canadian art in a variety of media within social, political and cultural contexts. Regionalism, multiculturalism, nationalism, gender, race and identity will be considered in relation to local and national collections in Ottawa.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2005 [0.5 credit]**Arts of the First Peoples: The Woodlands, the Plains and the Subarctic**

Introduction to the visual arts of Indigenous peoples of the eastern and central regions of North America. A post-colonial perspective will be used to consider selected examples of creative production from time immemorial to the present.

Prerequisite(s): second-year standing or permission of the discipline.

Lectures three hours a week.

ARTH 2006 [0.5 credit]**Arts of the First Peoples: The Southwest, the West Coast and the Arctic**

Introduction to the visual arts of Indigenous peoples of the western and northern regions of North America. A post-colonial perspective will be used to consider selected examples of visual materials from time immemorial to the present.

Prerequisite(s): second-year standing or permission of the discipline.

Lectures three hours a week.

ARTH 2007 [0.5 credit]**Asian Art**

Surveys Asian art from second-century China to post-war Japan. Representational strategies of court artists and artists from the capital are compared with artists on the periphery. Articulation of power in tombs, palaces and war propaganda is examined, as is the individual and the eccentric.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2008 [0.5 credit]**Inuit Art**

Survey of visual art produced by Canadian Inuit from the circumpolar area.

Precludes additional credit for ARTH 3104.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2009 [0.5 credit]**Art Live: Art History Workshop**

Examination of techniques, materials and institutions of art history; lectures and workshops on art historical research and writing, the materials of art, professional skills; site visits to art institutions.

Includes: Experiential Learning Activity

Prerequisite(s): ARTH 1100 and ARTH 1101, or permission of the discipline. Restricted to students enrolled in the Art History B.A. or B.A. Honours.

Lecture three hours a week.

ARTH 2102 [0.5 credit]**Greek Art and Archaeology**

The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as CLCV 2303.

Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2105 [0.5 credit]**Roman Art and Archaeology**

The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as CLCV 2304.

Precludes additional credit for CLCV 2302 (no longer offered), ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2106 [0.5 credit]**Chinese Art and Visual Culture**

A survey of Chinese art from the pre-modern era to re-inventions of traditions in modern and contemporary art. Artworks in various media (ink painting, calligraphy, Buddhist sculpture, ceramics, lacquer and garden architecture) will be studied in their historical, cultural and socio-political contexts.

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2107 [0.5 credit]**Islamic Architecture and Art**

Survey of artistic movements in Islamic art and architecture in the Mediterranean, the Near East, and Central and South Asia, from the seventh century to ca. 1450. Commonalities and differences between major dynastic visual cultures will be explored.

Prerequisite(s): second-year standing or permission of the Discipline.

Lecture three hours a week.

ARTH 2108 [0.5 credit]**Art Worlds**

Survey of an area of global art history. Topics may vary from year to year, and will be posted on the School for Studies in Art and Culture website.

Prerequisite(s): second-year standing or permission of the Department.

Lecture three hours a week.

ARTH 2202 [0.5 credit]**Medieval Architecture and Art**

A survey of architecture and art in Europe from ca. 313-1500 C.E. Sacred, secular, and domestic works will be discussed with reference to cultural meaning, social function, structure, and form.

Precludes additional credit for ARTH 2200 and ARTH 2201.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2300 [0.5 credit]**Italian Renaissance Art**

An examination of major works of art and architecture, issues and themes in the Italian Renaissance; emphasis on the fifteenth and sixteenth centuries, with a look at roots in the fourteenth.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2310 [0.5 credit]**Architecture of the Early Modern World [1400-1750]**

An examination of architecture from the late medieval period to the 18th century with particular attention paid to architecture and design cultures within the European and Islamic worlds and their cross-cultural interactions.

Precludes additional credit for ARTH 3305 (no longer offered).

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2404 [0.5 credit]**Art of the 17th and 18th Centuries**

Tracing developments in 17th- and 18th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and society.

Precludes additional credit for ARTH 2403 (no longer offered), ARTH 2405 (no longer offered) and ARTH 2406 (no longer offered).

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2502 [0.5 credit]**Art of the 19th Century**

Tracing developments in 19th-century painting, graphic art, sculpture, and architecture. Introduction to artists, art works, and issues central to the relationship between art and modernity.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2510 [0.5 credit]**Architecture of the 18th and 19th Centuries**

A survey of key monuments, theories, forms and technological developments of eighteenth- and nineteenth-century architecture.

Precludes additional credit for ARTH 3809 Section "B" taken in 2014.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2600 [0.5 credit]**Modern European Art 1900-1945**

Major artistic movements in Europe from about 1900 to 1945.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2601 [0.5 credit]**History and Theory of Photography**

Issues, themes, movements in photography and individual photographers from the origins of the medium to the present.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2610 [0.5 credit]**Twentieth-Century Architecture**

Developments in architectural form and culture through the course of the twentieth century, with emphasis on the formation and subsequent critique of the Modern Movement.

Precludes additional credit for ARTH 3609 and ARCH 3009.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2710 [0.5 credit]**Experiencing Architecture**

Development of critical thinking, writing, and looking skills in connection to architecture, through a combination of site visits, workshops and classroom exercises.

Includes: Experiential Learning Activity

Prerequisite(s): ARTH 1200 and ARTH 1201 or permission of the discipline. Restricted to students in the History and Theory of Architecture B.A. or B.A. Honours program.

Lecture three hours a week.

ARTH 2807 [0.5 credit]**Philosophy of Art**

Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences.

Also listed as PHIL 2807.

Lectures three hours a week.

ARTH 3000 [0.5 credit]**Themes in Canadian Art**

Selected aspects of Canadian art in a variety of media. Students will be exposed to works in the National Capital region.

Prerequisite(s): ARTH 2002 or ARTH 2003 or (for a photography topic) ARTH 2601 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3002 [0.5 credit]**Canadian Architecture**

Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques.

Includes: Experiential Learning Activity

Also listed as ARCH 4002.

Prerequisite(s): ARTH 1100 and ARTH 1101, or ARTH 1200 and ARTH 1201, or ARCH 1002 and ARCH 1201, and second-year standing or higher, or permission of the Discipline.

ARTH 3003 [0.5 credit]**Architecture and Representation**

Examination of the intersections between architecture, representations, and cultures.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing, or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3005 [0.5 credit]**American Architecture**

The cultural history of the United States as expressed through its architectural heritage. Selected buildings and complexes from the earliest settlements through the early twentieth century are examined.

Prerequisite(s): ARTH 1201 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3007 [0.5 credit]**Modern Asian Art**

Modern and contemporary art in East Asia, beginning in Japan with the 1868 Meiji revolution and the 1911 revolution in China.

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

ARTH 3008 [0.5 credit]**Contemporary Chinese Art and Art History**

Modern and contemporary art in China and beyond from the reform period in 1979 until today. Artworks will be examined in terms of their (art-)historical, discursive, socio-political, infrastructural and transcultural conditions of production and reception.

Prerequisite(s): second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 3100 [0.5 credit]**History and Methods of Art and Architectural History**

The study of the history of art and architectural history and the methodologies and research tools employed.

Precludes additional credit for ARTH 3106 (no longer offered).

Prerequisite(s): third-year or higher standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 3102 [0.5 credit]**Studies in Greek Art**

A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year. This course is repeatable for credit when the topic changes.

Also listed as CLCV 3306, RELI 3732.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

ARTH 3105 [0.5 credit]**Studies in Roman Art**

A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.

Also listed as CLCV 3307, RELI 3733.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

ARTH 3107 [0.5 credit]**History and Methods of Architectural History**

The study of the methodologies and research approaches employed by architectural historians.

Prerequisite(s): ARTH 3100 and third-year standing or higher in History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 3108 [0.5 credit]**History and Methods of Art History**

The study of current methodologies and research tools employed by art historians.

Precludes additional credit for ARTH 3106 (no longer offered).

Prerequisite(s): ARTH 3100 and third-year standing or higher in Art History, or permission of the Discipline.

Seminar three hours a week.

ARTH 3400 [0.5 credit]**History of Printmaking**

Exploration of printmaking techniques from the 16th century to the present focusing on the work of famous and lesser-known printmakers. Topics may include: printmaking genres (from fine art prints to caricature), originality versus reproduction, book illustration, the art market, posters and propaganda.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3507 [0.5 credit]**The Artist in Context**

An examination of one artist's or group of artists' life and work. Relevant artistic, intellectual, social, political and theoretical contexts are considered.

Prerequisite(s): ARTH 1101 or ARTH 2502 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3600 [0.5 credit]**Art Since 1945**

Contemporary art in the global context from 1945 to the present, including Abstract Expressionism, Pop Art, Postmodernism, object art, performance art and installations.

Prerequisite(s): second-year standing or higher, or permission of the Discipline.

Lecture three hours a week.

ARTH 3701 [0.5 credit]**Art and Architecture on Site**

The study of art and/or architecture on site outside the National Capital Region, in Canada or internationally. May include a combination of study in Ottawa and on site. Locations vary. Students are expected to bear all travel and other costs arising from site visits.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Discipline. Applicants will normally have third-year standing with a minimum of 1.0 credit in Art History or History and Theory of Architecture and a GPA of 8.0 or above.

Hours to be arranged. Locations will vary.

ARTH 3705 [0.5 credit]**Selected Museum Exhibition**

This seminar complements a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or higher or permission of the Discipline.

Seminar and/or lectures three hours a week.

ARTH 3710 [0.5 credit]**Architecture and Empire**

The impact of imperial power and aspiration on the built environment, from the Ancient world to the present day, taking 'empire' in its broadest political, social and economic sense.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.

Seminar and/or lectures three hours a week.

ARTH 3809 [0.5 credit]**A Closer Look at Art and Visual Culture**

Selected aspects of art history and visual culture from ancient times to the present.

Prerequisite(s): third-year standing or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3810 [0.5 credit]**A Closer Look at the Designed Environment**

Selected aspects of the history of the designed environment, from ancient times to the present.

Prerequisite(s): ARTH 1100 or ARTH 1101 or ARTH 1200 or ARTH 1201 and second-year standing or permission of the Discipline.

Lectures and/or seminars three hours a week.

ARTH 3900 [0.5 credit]**Practicum in Art and Architectural History**

Practical experience gained by working on specific projects under the supervision of the staff of a museum, cultural institution, public- or private-sector organization associated with art, architecture, design, or heritage. A maximum of 1.0 credit in practicum courses may be used to fulfill program requirements.

Includes: Experiential Learning Activity

Prerequisite(s): B.A. or B.A. (Honours) in Art History or History and Theory of Architecture with third-year standing or higher and a CGPA of 9.00 or better in ARTH courses, and permission of the Discipline.

ARTH 4000 [0.5 credit]**Topics in Art in Canada**

Selected topics in art in Canada. Students will be exposed to works in local and national collections in the National Capital region.

Prerequisite(s): one of ARTH 2002, ARTH 2003, ARTH 3000 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminars three hours a week.

ARTH 4002 [0.5 credit]**Topics in Architecture in Canada**

Selected aspects of the designed environment in Canada.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the discipline.

ARTH 4003 [0.5 credit]**Topics in Contemporary Chinese Art**

Critical examination of contemporary Chinese art. Topics include socially engaged art, historiographies of Chinese contemporary art, re-inventions of traditions, gender and politics of the body, exhibition histories and infrastructures of contemporary art in China.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4005 [0.5 credit]**Topics in Contemporary Indigenous Art**

This course will use critical theory to examine aspects of contemporary visual art created by the Inuit and First Peoples in North America.

Prerequisite(s): ARTH 2005 or ARTH 2006 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4007 [0.5 credit]**Topics in Asian Art**

A selected topic in East Asian Art, which may include 19th century Ukiyo-e woodblock prints, The Gutai Group, performance art in China and Japan, and contemporary Chinese art.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4008 [0.5 credit]**Transnational Theory**

Critical examination of transnational theories of cultural analysis, including Orientalism, Post-Colonial theory, translation theory and theories of cultural hybridity.

Precludes additional credit for ARTH 3103.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4107 [0.5 credit]**Topics in Islamic Architecture and Art**

Selected aspects of Islamic Architecture and Art.

Prerequisite(s): ARTH 2107 or ARTH 2310 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4202 [0.5 credit]**Topics in Medieval Architecture and Art**

Selected aspects of Medieval or Medievalist Architecture and Art.

Prerequisite(s): ARTH 2202 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4305 [0.5 credit]**Topics in Renaissance Art**

Selected aspects of Renaissance art and society.

Prerequisite(s): ARTH 2300 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4402 [0.5 credit]**Topics in Art of the 18th and 19th Centuries**

Selected aspects of 18th-century and/or 19th-century art. Precludes additional credit for ARTH 4406 (no longer offered), ARTH 4505 (no longer offered).

Prerequisite(s): ARTH 2404 or ARTH 2405 or ARTH 2406 or ARTH 2502 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4600 [0.5 credit]**Art, Architecture, and Gender**

Art and/or architectural creation, reception and/or historiography through the lens of gender identities.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4602 [0.5 credit]**Issues in the Theory and History of Photography**

Relates the themes of selected theoretical texts on photography to specific examples of photographic practice.

Prerequisite(s): ARTH 2601 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4610 [0.5 credit]**Topics in Modern Architecture or Design**

Selected topics in architecture and design of the Modern era.

Prerequisite(s): ARTH 2610 and fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4701 [0.5 credit]**Art and Architecture on Site**

Intensive study of art and/or architecture on site outside the National Capital region, in Canada or internationally. May include a combination of study in Ottawa and on site. Students are expected to bear all travel and other costs arising from site visits.

Includes: Experiential Learning Activity

Prerequisite(s): Permission of the Discipline. Applicants will normally have fourth-year standing in Art History or History and Theory of Architecture and a CGPA of 8.0 or above.

Hours to be arranged. Locations vary.

ARTH 4705 [0.5 credit]**Seminar: Selected Museum Exhibition**

Studies a major exhibition held at a specific museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.

Lectures and/or seminar three hours a week.

ARTH 4800 [0.5 credit]**Topics in Architectural History**

Selected aspects of architectural history from ancient times to the present.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4809 [0.5 credit]**Topics in Art History and Criticism**

Selected aspects of art history and/or criticism from ancient times to the present.

Prerequisite(s): fourth-year standing in Art History or History and Theory of Architecture, or permission of the Discipline.

Seminar three hours a week.

ARTH 4900 [0.5 credit]**Directed Readings and Research**

Supervised readings and research projects. Guidelines must be obtained from the Undergraduate Supervisor prior to registration. A written project outline, approved by the supervising Art History or History and Theory of Architecture faculty member, must be submitted by the last day for course changes.

Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture and permission of the Discipline.

ARTH 4909 [1.0 credit]**Honours Research Essay**

An essay of approximately 10,000 words, resulting from independent research, supervised by Art History or History and Theory of Architecture faculty.

Prerequisite(s): fourth-year Honours standing in Art History or History and Theory of Architecture with a minimum CGPA of 9.00 and permission of the Discipline.

Biochemistry (BIOC)

Biochemistry (BIOC) Courses**BIOC 2200 [0.5 credit]****Cellular Biochemistry**

Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.

Includes: Experiential Learning Activity

Also listed as BIOL 2200.

Precludes additional credit for BIOL 2201.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1006 or CHEM 1002) or permission of the Institute. It is strongly recommended that students in Biochemistry programs take this course in their second year of study.

Lectures three hours a week, laboratory or tutorial four hours a week.

BIOC 2300 [0.5 credit]**Physical Biochemistry**

Energy of biological systems, molecular interactions, diffusion principles, introduction to protein folding, structure and thermodynamics, ligand binding and nucleic acid structures; experimental design and data management.

Precludes additional credit for CHEM 2103.

Prerequisite(s): BIOC 2200 (can be taken concurrently with BIOC 2300) and MATH 1007 and MATH 1107, and (PHYS 1007 and PHYS 1008) or (PHYS 1003 and PHYS 1004).

Lectures three hours a week, tutorials three hours a week.

BIOC 2400 [0.5 credit]**Independent Research I**

Students carry out a laboratory research project under the supervision of a faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to Honours students of second-year standing in a Biochemistry program with a GPA of 10.0 or higher in first year, and approval of the Director and a Faculty supervisor.

Laboratory research for at least three hours a week over two terms.

BIOC 3008 [0.5 credit]**Bioinformatics**

A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.

Includes: Experiential Learning Activity

Also listed as BIOL 3008 and COMP 3308.

Prerequisite(s): BIOC 2200 or BIOL 2200, or BIOL 2201, or permission of the Institute.

Lecture two hours a week, computer workshop three hours a week.

BIOC 3101 [0.5 credit]**General Biochemistry I**

Chemistry, structure and function of proteins, lipids, carbohydrates and nucleic acids. Monomers, linkages and types of biochemical polymers that are formed. Mechanism of action of enzymes, regulatory control mechanisms of proteins and integration of biochemical pathways.

Precludes additional credit for CHEM 3401.

Prerequisite(s): (BIOC 2200 or BIOL 2200), and (CHEM 2203 and CHEM 2204) or (CHEM 2207 and CHEM 2208) or permission of the Institute.

Lectures three hours a week.

BIOC 3102 [0.5 credit]**General Biochemistry II**

Anabolic and catabolic processes. Regulation of cell compartment (membranes, mitochondria, chloroplast, peroxisome, nuclei) composition. Genetic controls of transcription, translation and post-translational modification of protein structure and function. Biochemical processes of disease, development, and toxicology.

Prerequisite(s): BIOC 3101 and BIOL 2104.

Lectures three hours a week.

BIOC 3103 [0.5 credit]**Practical Biochemistry I**

Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, and BIOC 3202.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 3006 (no longer offered).

Prerequisite(s): (BIOC 2200 or BIOL 2200) and CHEM 2203 or permission of the Institute. CHEM 2204 and (BIOC 2300 or CHEM 2103) are also recommended. It is highly recommended that BIOC 3101 and BIOC 3202 be taken concurrently.

Laboratory four hours a week, tutorial one hour per week.

BIOC 3104 [0.5 credit]**Practical Biochemistry II**

Introduction to experimental biochemistry and the theory and concepts dealt with in BIOC 3101, BIOC 3102, and BIOC 3202.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 3006 (no longer offered).

Prerequisite(s): BIOC 3103. It is highly recommended that BIOC 3102 be taken concurrently.

Laboratory four hours a week, tutorial one hour a week.

BIOC 3202 [0.5 credit]**Biophysical Techniques and Applications**

Theory and applications of current biochemical/biophysical instrumentation and techniques including biophysical spectroscopy, molecular structure determination, calorimetry, and mass spectrometry.

Precludes additional credit for BIOC 4002.

Prerequisite(s): BIOC 2200 or permission of the Institute.

Lectures three hours a week.

BIOC 3203 [0.5 credit]**Biochemical Pharmacology**

Biochemical principles of pharmacology, including receptor mechanisms, signal transduction, pharmacokinetics, and pharmacodynamics. Genome-wide association studies, pharmacogenomics, and personalized medicine will also be included.

Prerequisite(s): BIOC 2200 or BIOL 2200, or permission of the Institute.

Lectures three hours a week.

BIOC 3400 [0.5 credit]**Independent Research II**

Students carry out a laboratory research project under the supervision of faculty member from the Institute of Biochemistry. A research report must be submitted by the last day of classes for evaluation by the Director and Faculty supervisor.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to Honours students of third-year standing in a Biochemistry program with a GPA of 10.0 or higher in second year, and approval of the Director and Faculty supervisor.

Laboratory research for at least three hours a week over two terms.

BIOC 3999 [0.0 credit]**Co-operative Work Term**

Practical experience for students enrolled in the co-operative option. Students must receive a satisfactory evaluation from their work term employer; and present a written report describing their work term project. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Biochemistry co-operative option and permission of the Institute.

BIOC 4001 [0.5 credit]**Methods in Biochemistry**

Principles and applications of modern biochemical methodology, including ultracentrifugation, electrophoresis, ELISA, EMSA, experimental planning, ligand binding kinetics, fluorescence spectroscopy, affinity purification, and in vitro translation.

Includes: Experiential Learning Activity

Prerequisite(s): BIOC 3103 and BIOC 3104 or permission of the Institute.

Lectures and discussion two hours, laboratory four hours a week.

BIOC 4004 [0.5 credit]**Industrial Biochemistry**

The application of biochemistry to the production of biological compounds useful in nutrition, medicine, and the food and chemical industries. General strategies for efficient production of these compounds by controlling the activities of living cells or enzymes.

Prerequisite(s): BIOC 3101 and BIOC 3102 (BIOC 3102 may be taken concurrently), or permission of the Institute. Lecture three hours a week.

BIOC 4005 [0.5 credit]**Biochemical Regulation**

Regulation at the transcriptional, translational and metabolic level; regulation of cell and subcellular organelle function and other timely topics may be included.

Prerequisite(s): BIOC 3101 and BIOC 3102.

Lectures three hours a week.

BIOC 4007 [0.5 credit]**Membrane Biochemistry**

Biochemical and biophysical aspects of biomembrane structure and function. Topics may include: membrane lipids and proteins, lipid polymorphism, model membranes, liposomes, membrane biogenesis, the membrane cytoskeleton, membrane trafficking, membrane fusion, exocytosis and signal transduction across membranes.

Prerequisite(s): BIOL 2200 or BIOC 2200, or BIOC 3101 (which may be taken concurrently with BIOC 4007), or permission of the Institute.

Lectures two hours a week and workshop two hours a week.

BIOC 4008 [0.5 credit]**Computational Systems Biology**

Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.

Includes: Experiential Learning Activity

Also listed as COMP 4308.

Prerequisite(s): BIOC 3101 or permission of the Institute.

Lecture one and a half hours per week, workshop one and a half hours per week.

BIOC 4009 [0.5 credit]**Biochemistry of Disease**

The biochemical basis of disease including genetic and metabolic disorders such as cancer, neurological degenerative conditions, diabetes, stroke and microbial infections.

Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.

Lectures three hours a week.

BIOC 4200 [0.5 credit]**Immunology**

The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.

Also listed as BIOL 4200.

Prerequisite(s): BIOL 3201 or permission of the Institute.

Lectures three hours a week.

BIOC 4201 [0.5 credit]**Advanced Cell Culture and Tissue Engineering**

Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering.

Includes: Experiential Learning Activity

Also listed as BIOL 4201.

Prerequisite(s): BIOL 3201 or permission of the Institute.

Laboratory four hours per week, tutorial one hour a week.

BIOC 4202 [0.5 credit]**Mutagenesis and DNA Repair**

A mechanistic study of mutagenesis and DNA repair. Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.

Also listed as BIOL 4202.

Prerequisite(s): BIOL 3104 and BIOL 2200/BIOC 2200, or permission of the Institute.

Lectures and tutorial three hours a week.

BIOC 4203 [0.5 credit]**Advanced Metabolism**

Structure, biochemical derivation and function of secondary metabolites such as toxins and antibiotics.

Examples from plant, fungal and animal systems.

Prerequisite(s): BIOC 3101 and BIOC 3102, or permission of the Institute.

Lectures three hours a week.

BIOC 4204 [0.5 credit]**Protein Biotechnology**

An advanced lecture, discussion and seminar course covering the theory, development and current techniques of protein and enzyme engineering. Topics to be discussed may also include applications in biotechnology, nanotechnology and new frontiers in basic and applied research.

Precludes additional credit for BIOC 4002.

Prerequisite(s): BIOC 3101 and BIOC 3202 (may be taken concurrently), or permission of the Institute.

Lectures two hours a week, workshop two hours a week.

BIOC 4708 [0.5 credit]**Principles of Toxicology**

Basic theorems of toxicology with examples of current research problems. Toxic risk is defined as the product of intensive hazard and extensive exposure. Each factor is assessed in scientific and social contexts and illustrated with many types of experimental material.

Prerequisite(s): BIOC 3101 and fourth-year standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as BIOL 6402, CHEM 5708, for which additional credit is precluded.

Lectures three hours a week.

BIOC 4901 [0.5 credit]**Selected Topics in Biochemistry**

Selected topics of current interest in biochemistry are offered upon approval by the Director in consultation with members of the Institute.

BIOC 4906 [1.0 credit]**Interdisciplinary Research Project**

Collaborative, interdisciplinary research project approved by the Director. Requires co-supervision, with at least one faculty member from the Institute of Biochemistry.

Evaluation is based on a written thesis and poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 4907 and BIOC 4908.

Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology, permission of the Institute.

BIOC 4907 [1.0 credit]**Honours Essay and Research Proposal**

An independent research study using library or computational resources. The candidate will prepare a critical review of a topic approved by a faculty adviser. Evaluation will be based on a written report and a poster presentation of the project.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 4906 [1.0] and BIOC 4908 [1.0].

Prerequisite(s): fourth-year standing in an Honours Biochemistry program and permission of the Institute.

BIOC 4908 [1.0 credit]**Research Project**

Students carry out a research project approved by the Director, under the supervision of a faculty member of the Institute, in either the Biology or Chemistry departments. Evaluation is based on a written thesis and poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 4906 and BIOC 4907.

Prerequisite(s): (BIOC 3103 and BIOC 3104) and (BIOC 3101 and BIOC 3102) or equivalent, and eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology.

Biology (BIOL)

Biology (BIOL) Courses**BIOL 1010 [0.5 credit]****Biotechnology and Society**

A course for students interested in the science behind recent advances in biotechnology. The different ways in which biotechnology is being applied in agriculture, health care, and the environment will be examined.

Precludes additional credit for Credit will not be given if taken concurrently with, or after BIOL 2200 or BIOC 2200 or BIOL 2201. Students in Biology and Biochemistry programs may only take this course as a free elective.

Lectures three hours a week.

BIOL 1103 [0.5 credit]**Foundations of Biology I**

A research-oriented course focusing on the scientific process of biological exploration at the cellular level.

Topics include cell organization, metabolism, genetics, and reproduction.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 1003 (no longer offered).

Prerequisite(s): Ontario 4U/M in Biology (or equivalent), or Ontario 4U/M in Chemistry (or equivalent).

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1104 [0.5 credit]**Foundations of Biology II**

A research-oriented course focusing on the scientific process of biological exploration at the macroscale.

Topics include evolution, diversity of life, and ecological relationships.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 1004 (no longer offered).

Prerequisite(s): Ontario 4U/M in Biology (or equivalent) or BIOL 1103.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 1105 [0.5 credit]**Biological Methods, Analysis and Interpretation**

Formulation of biological research questions, development of hypotheses and predictions, design of experiments, collection and analysis of data, interpretation and presentation of results.

Lectures three hours a week.

BIOL 1902 [0.5 credit]**Natural History**

A course designed primarily for students in non-biology programs to investigate the natural history of plants and animals, and the communities in which they occur. Particular attention is paid to the Ottawa region, but appropriate examples from other locales are also included. Lectures three hours a week.

BIOL 2001 [0.5 credit]**Animals: Form and Function**

An introduction to the diverse structures of animals (both invertebrates and vertebrates) in relationship to their functions, discussed within an evolutionary framework.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2002 [0.5 credit]**Plants: Form and Function**

An introduction to the structure and development of higher plants (at cellular, morphological and organism levels) discussed in relation to their function.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2005 [0.5 credit]**Human Biology**

A course for non-specialists interested in how the human body works. Topics will include biological molecules, cells, genetics, and various organ systems. Examples will be used to connect concepts taught in the course with general knowledge of human health and disease.

Prerequisite(s): BIOL 1003 or BIOL 1103 and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006) or permission of the Department. Students in Biology and Biochemistry programs may only take this course as a free elective.

Lectures three hours a week.

BIOL 2104 [0.5 credit]**Introductory Genetics**

Lecture/laboratory course on the mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics. It is strongly recommended that this course be taken by Biology majors in their second year of study.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 2106 (no longer offered) and BIOL 2107. Credit for BIOL 2106 will only be given if taken before BIOL 2104.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIOL 2107 [0.5 credit]**Fundamentals of Genetics**

Mechanisms of inheritance and the nature of gene structure, composition and function, introducing both classical Mendelian genetics and modern molecular genetics.

Precludes additional credit for BIOL 2104 and BIOL 2106 (no longer offered).

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the Department.

Lectures three hours a week.

BIOL 2200 [0.5 credit]**Cellular Biochemistry**

Cellular functions and their interrelationships. Introduction to thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.

Includes: Experiential Learning Activity

Also listed as BIOC 2200.

Precludes additional credit for BIOL 2201.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), or permission of the Department.

Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2201 [0.5 credit]**Cell Biology and Biochemistry**

A study of the molecular, metabolic and structural organization of cells in relation to function. This course is recommended for students not taking upper year Biology laboratory courses for which BIOL/BIOC laboratories are prerequisites.

Precludes additional credit for BIOL 2200, BIOC 2200.

Prerequisite(s): (BIOL 1003 or BIOL 1103) and (CHEM 1002 or CHEM 1006), or permission of the Department.

Lectures three hours a week.

BIOL 2301 [0.5 credit]**Biotechnology I**

An introductory course on the science, technology, entrepreneurial skills and business considerations related to biotechnology. The course will survey broadly across the disciplines of Biology, including applications in agriculture, health, environment and industry.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104) or permission of the department.

Lectures and workshops three hours a week

BIOL 2303 [0.5 credit]**Microbiology**

The biology of the bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.

Also listed as ENVE 2002.

Prerequisite(s): BIOL 1003 or BIOL 1103.

Lectures three hours a week.

BIOL 2600 [0.5 credit]**Ecology**

The scientific study of interactions of living organisms and their environment, and how these affect the distribution and abundance of life. Topics include energy transformation and flow, nutrient cycling, population and community dynamics, human impacts on ecosystems, conservation issues. Laboratory includes field and computer exercises.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), or permission of the Department.

Lectures three hours a week, laboratory or tutorial four hours a week.

BIOL 2903 [0.5 credit]**Natural History and Ecology of Ontario**

Introduction to the remarkable diversity and ecological relationships of Ontario's flora and fauna, which are explored in a habitat context.

Precludes additional credit for BIOL 1903 (no longer offered).

Prerequisite(s): BIOL 1004 or BIOL 1104 or BIOL 1902.

Lectures three hours a week.

BIOL 3004 [0.5 credit]**Insect Diversity**

Introductory course dealing with the taxonomic diversity, anatomy, behavior and physiology of insects, as well as their impacts on ecosystems, agriculture and animal and human health.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4601.

Prerequisite(s): BIOL 2001.

Lectures three hours a week.

BIOL 3008 [0.5 credit]**Bioinformatics**

A practical exploration in the application of information technology to biochemistry and molecular biology. Insight into biological knowledge discovery via molecular structure and function prediction, comparative genomics and biological information management.

Includes: Experiential Learning Activity

Also listed as BIOC 3008, COMP 3308.

Prerequisite(s): BIOC 2200 or BIOL 2200, or BIOL 2201, or permission of the Department.

Lectures two hours a week, computer workshop three hours a week.

BIOL 3102 [0.5 credit]**Mycology**

This introductory course will cover the morphology, physiology, life cycles, evolution, ecology and biotechnology of the fungi.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2104 or BIOL 2107.

Lectures three hours a week.

BIOL 3104 [0.5 credit]**Molecular Genetics**

A lecture course dealing with modern advances in molecular genetics.

Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department.

Lectures three hours a week.

BIOL 3111 [0.5 credit]**Vertebrate Evolution: Mammals, Reptiles, and Birds**

Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as EARTH 3111.

Prerequisite(s): BIOL 2001 or EARTH 1009, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

BIOL 3112 [0.5 credit]**Vertebrate Evolution: Fish and Amphibians**

Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as EARTH 3112.

Prerequisite(s): BIOL 2001 or EARTH 1009, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

BIOL 3201 [0.5 credit]**Cell Biology**

A lecture and laboratory course on the structure, composition, and function of eukaryotic cells.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2104 and BIOL 2200/BIOC 2200, or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 3202 [0.5 credit]**Principles of Developmental Biology**

Introduction to the underlying principles and mechanisms governing development in multicellular animals and plants. Differentiation, growth, morphogenesis, and patterning will be examined at the organismal, cellular, and molecular levels to provide a balanced view of developmental phenomena in key model organisms.

Prerequisite(s): BIOL 2104 or BIOL 2107 and one of BIOL 2001 or BIOL 2002, or permission of the Department.

Lectures three hours a week.

BIOL 3205 [0.5 credit]**Plant Biochemistry and Physiology**

A lecture and laboratory course consisting of selected topics in metabolism and physiology of plants, including photosynthesis, nutrient uptake and transport, intermediary and secondary metabolism, germination, growth and development.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2002 and BIOL 2200/BIOC 2200, or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 3301 [0.5 credit]**Biotechnology II**

An interdisciplinary course on interactions between science, invention and innovation in biotechnology. Case studies related to regional biotechnology opportunities; social and ethical issues impacting biotechnology.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2301, BIOL 2104 or BIOL 2107, and BIOL 2200/BIOC 2200 or BIOL 2201, or permission of the department.

Lectures and laboratory/workshops three hours a week

BIOL 3303 [0.5 credit]**Experimental Microbiology**

Intensive training in laboratory techniques in microbiology, using bacteria and other microorganisms to demonstrate processes of cell growth, metabolism, gene expression, rapid evolution, gene transfer, microbial community dynamics and interactions with other organisms.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2104, BIOL 2200/BIOC 2200 and BIOL 2303, or permission of the Department.

Lecture/tutorial one and a half hours a week, laboratory four hours a week.

BIOL 3305 [0.5 credit]**Human and Comparative Physiology**

The properties of physiological systems and components of humans and other animals with an emphasis on physical and chemical bases.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 3306.

Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2001.

Lectures three hours a week, laboratory four hours a week.

BIOL 3306 [0.5 credit]**Human Anatomy and Physiology**

The anatomy and physiology of the neuromuscular, cardiovascular, respiratory, and excretory systems of humans with comparison to other animals.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 3305.

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), and (CHEM 1001 and CHEM 1002) or (CHEM 1005 and CHEM 1006), and third year standing.

Lectures three hours per week.

BIOL 3307 [0.5 credit]**Advanced Human Anatomy and Physiology**

The anatomy and physiology of the endocrine, skeletal, digestive, immunological, and reproductive systems, with additional emphasis on the embryological origins of the major physiological systems.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3305 or BIOL 3306.

Lectures three hours per week, workshop or laboratory four hours per week.

BIOL 3501 [0.5 credit]**Biomechanics**

Properties of muscles, tendons, bones, joints and the co-ordinated use of these structures. Human and other animal locomotion and fitness, bird flight, especially the soaring of the vulture and the albatross, and animal migration are covered in detail.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 1003 and BIOL 1004) or (BIOL 1103 and BIOL 1104), and third-year standing.

Lectures three hours a week, workshop two hours a week.

BIOL 3601 [0.5 credit]**Ecosystems and Environmental Change**

Exploration of the unique contribution of the ecosystem approach to ecology, and of early key literature in ecosystem ecology through to current work on global environmental change.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600.

Lectures three hours a week, laboratory four hours a week in six sessions.

BIOL 3602 [0.5 credit]**Conservation Biology**

The science of biology as applied to the problem of maintaining species diversity. Topics include: history of conservation biology, valuation of species, indices of biodiversity, extinction, conservation genetics, conservation planning in parks and reserves, landscape ecology and case studies of conservation problems.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600 or permission of the Department.

Lectures three hours a week and laboratory/workshop three hours a week.

BIOL 3604 [0.5 credit]**Statistics for Biologists**

Introduction to the analysis of biological data. Students analyze real biological data sets in weekly laboratory sessions. Methods introduced include simple linear, polynomial, and multiple regression analysis, analysis of variance, nonparametric tests, tests of independence and logistic regression analysis.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 1105 or STAT 2507.

Lectures one and one-half hours and laboratory two and one-half hours a week.

BIOL 3605 [0.5 credit]**Field Course I**

An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.

Includes: Experiential Learning Activity

Also listed as NEUR 3203, for animal behaviour modules only.

Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department.

Students may take both BIOL 3605 and BIOL 3606 for credit, but neither may be used to repeat a particular module.

All day, approximately six days a week.

BIOL 3606 [0.5 credit]**Field Course II**

An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. Transportation and room and board costs are borne by the student. Ontario Universities Program in Field Biology; see offered modules for specific prerequisites.

Includes: Experiential Learning Activity

Prerequisite(s): at least one course in BIOL beyond the 1000-level and written permission of the Department.

Students may take both BIOL 3605 and BIOL 3606 for credit, but neither can be used to repeat a particular module.

All day, approximately six days a week.

BIOL 3608 [0.5 credit]**Principles of Biogeography**

Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.

Includes: Experiential Learning Activity

Also listed as GEOG 3104.

Prerequisite(s): BIOL 2600 or GEOG 1010 or permission of the Department.

Lectures, laboratory, and fieldwork five hours a week.

BIOL 3609 [0.5 credit]**Evolutionary Concepts**

Evolution is the change in population properties across generations. Genetic variation, mutation, selection, drift, gene flow, genome evolution, speciation, development, biodiversity, fossils, and macro-evolution.

Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the instructor.

Lectures three hours a week.

BIOL 3611 [0.5 credit]**Evolutionary Ecology**

The term "adaptation" is meaningful only with respect to an ecological context. Ecological contexts lead to evolutionary outcomes such as diverse mating systems, ageing, sexual reproduction, sexual dimorphism, geographic variation, phenotypic plasticity, and diverse life histories.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4608.

Prerequisite(s): BIOL 2600.

Lectures three hours a week; one field trip.

BIOL 3612 [0.5 credit]**Computational Methods in Ecology and Evolution**

Introduction to the development and use of computer programs to address biological problems. Topics include the development of programs to analyse ecological data, models of population dynamics, deterministic chaos, cellular automata, simulations of foraging behaviour and evolutionary computation.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600 or permission of the Department.

Lectures two hours per week, workshop three hours per week.

BIOL 3801 [0.5 credit]**Plants and Herbivores**

Exploration of the chemical, physiological, ecological and evolutionary interactions that underlie the relationship between plants and their insect herbivores.

Prerequisite(s): BIOL 2001 and BIOL 2002.

Lectures/seminars three hours a week.

BIOL 3802 [0.5 credit]**Animal Behaviour**

Advanced study of animal behaviour including the environmental, genetic, and neural influences on behaviour. Topics such as predator-prey interactions, mating behaviour, migration, parental care and social interactions are interpreted in an evolutionary context. Prerequisite(s): BIOL 2001 or BIOL 2600 or permission of the Department.

Lectures and workshop/tutorials three hours a week.

BIOL 3804 [0.5 credit]**Social Evolution**

Diversity in social behaviour from evolutionary and ecological perspectives. Topics include ecological determinants of social living, social networks, social foraging, inclusive fitness, kin selection, altruism, cooperation, and mating systems and strategies. Prerequisite(s): BIOL 2001 and BIOL 2600, or permission of the Department.

Lectures three hours a week.

BIOL 3901 [0.5 credit]**Research Proposal**

The development of a competitive research proposal in consultation with an advisor.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in an Honours Biology program and permission of the Department.

BIOL 3902 [0.5 credit]**Topics in Biology I**

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): third-year standing in a Biology program or permission of the Department.

Lecture, seminars, or workshops three hours per week.

BIOL 3999 [0.0 credit]**Co-operative Work Term Report**

Practical experience for students enrolled in the Co-operative Option. Students must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Biology Co-operative Option and permission of the Department.

BIOL 4008 [0.5 credit]**Molecular Plant Development**

Recent advances in plant development including molecular, biochemical, genomics, and proteomics studies.

Prerequisite(s): BIOL 2002 or permission of the Department.

Lectures three hours a week.

BIOL 4102 [0.5 credit]**Molecular Ecology**

The interface of molecular biology, ecology and population biology. Topics include experimental design and a survey and critique of molecular genetic methods to study ecology.

Prerequisite(s): BIOL 2600 and (BIOL 2104 or BIOL 2107) or permission of the Department.

Lectures three hours a week.

BIOL 4103 [0.5 credit]**Population Genetics**

Evolution of gene frequencies, including selection, mutation, genetic drift, inbreeding, gene flow, and population structure.

Prerequisite(s): BIOL 2104 or BIOL 2107 or permission of the Department. A course in statistics is highly recommended.

Lectures and seminars three hours a week.

BIOL 4104 [0.5 credit]**Evolutionary Genetics**

An overview of the molecular evidence of evolution, speciation as well as the phylogenetic analysis of biological sequence data and biometrical traits.

Includes: Experiential Learning Activity

Prerequisite(s): (BIOL 2001 or BIOL 2002) and (BIOL 2104 or BIOL 2107) or permission of the Department. A course in statistics is recommended.

Lectures and computer lab three hours a week.

BIOL 4106 [0.5 credit]**Advances in Molecular Biology**

Review of the application of high throughput approaches to research in molecular and cellular biology and biochemistry with an emphasis on gene function and human disease progression.

Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3201).

Lectures and seminars three hours a week.

BIOL 4109 [0.5 credit]**Laboratory Techniques in Molecular Genetics**

This laboratory course provides practical familiarity with commonly used techniques in molecular genetics. The laboratory is suitable for students with a developing interest in problems of molecular and cellular biology and biochemistry.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2200/BIOC 2200 and BIOL 2303 and BIOL 3104 or permission of the Department.

Lecture/laboratory six hours a week in two sessions.

BIOL 4200 [0.5 credit]**Immunology**

The organization and function of the immune system, including the anatomy of the immune system, the properties and behaviour of cells of the immune system, and the molecular and genetic bases of the immune response.

Also listed as BIOC 4200.

Prerequisite(s): BIOL 3201 or permission of the Department.

Lectures three hours a week.

BIOL 4201 [0.5 credit]**Advanced Cell Culture and Tissue Engineering**

Theory and application of current techniques and developments in cell culture as applied to research questions in the field of stem cells and tissue engineering.

Includes: Experiential Learning Activity

Also listed as BIOC 4201.

Prerequisite(s): BIOL 3201 or permission of the Department.

Laboratory four hours per week, tutorial one hour a week.

Labs require regular participation outside of the scheduled lab time to maintain cell cultures and set up or complete experiments.

BIOL 4202 [0.5 credit]**Mutagenesis and DNA Repair**

A mechanistic study of mutagenesis and DNA repair. Topics include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the development of genetic disease and cancer.

Also listed as BIOC 4202.

Prerequisite(s): BIOL 3104 and BIOL 2200/BIOC 2200 or permission of the Department.

Lectures and tutorial three hours a week.

BIOL 4203 [0.5 credit]**Evolution of Sex**

The evolution of sex, including meiosis, syngamy, sex determination, sex chromosomes, and gender from organismal, genetic, and developmental perspectives; the origin, maintenance, function, and ubiquity of sex.

Prerequisite(s): BIOL 2104 or BIOL 2107.

Lectures three hours a week.

BIOL 4206 [0.5 credit]**Human Genetics**

A survey of human genetic variation and mutation in a molecular genetics context. Topics may include molecular basis of diseases, chromosomal abnormalities, genomic imprinting, cancer genetics, genomics, gene mapping and gene therapy.

Prerequisite(s): BIOL 3104 or permission of the Department.

Lectures three hours a week.

BIOL 4207 [0.5 credit]**Advanced Embryology & Developmental Biology**

A laboratory-based exploration of techniques and recent developments in the use of model embryological systems as applied to questions of development and human health.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3201 or BIOL 3202 or permission of the Department.

Laboratory four hours per week, tutorial one hour a week.

Labs require regular participation outside of the scheduled lab time to set up or complete experiments.

BIOL 4209 [0.5 credit]**Advanced Plant Physiology**

An advanced course dealing with recent developments in selected topics of plant physiology.

Prerequisite(s): BIOL 3205 and CHEM 2203, CHEM 2204 or permission of the Department.

Lectures/discussion three hours a week.

BIOL 4300 [0.5 credit]**Applied Microbiology**

Studies of the application of microorganisms. Topics may include: microbial communities, and agricultural, pharmaceutical, industrial and health sciences.

Prerequisite(s): (BIOL 2200/BIOC 2200 or BIOL 2201), BIOL 2303 and (BIOL 3104 or BIOL 3303) or permission of the Department.

Lectures and tutorial three hours a week.

BIOL 4301 [0.5 credit]**Current Topics in Biotechnology**

Explorations of developing biotechnologies in areas such as microbial products, protein engineering, plant genetic engineering, environmental remediation, pharmaceuticals production and medical diagnostics and therapy.

Prerequisite(s): BIOL 3301 or permission of the department.

Lectures and tutorials three hours a week.

BIOL 4303 [0.5 credit]**Advances in Microbiology**

Exploration of current microbiology including the molecular biology of infectious agents, use of model micro-organisms to study human cells and diseases, and functional genomics and proteomics. Special attention will be paid to the field's "big questions". Students will critically examine a number of research proposals.

Prerequisite(s): BIOL 2303 and (BIOL 3104 or BIOL 3303 or BIOC 3102) or permission of the Department.

Lectures three hours per week.

BIOL 4304 [0.5 credit]**Forensic Biology**

An introduction to forensics that covers topics in molecular biology, biochemistry, genetics, population genetics and statistics as they relate to forensic biology. The course will describe the techniques used to identify body fluids and generate DNA profiles as well as the interpretation of forensic results.

Prerequisite(s): (BIOL 2104 or BIOL 2107) and (BIOL 2200/BIOC 2200 or BIOL 2201) or permission of the Department.

Lectures three hours a week.

BIOL 4306 [0.5 credit]**Animal Neurophysiology**

A course dealing with recent advances made in particular areas of animal neurophysiology.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4305.

Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.

Lectures two hours a week, workshops or laboratory four hours a week.

BIOL 4309 [0.5 credit]**Studies in Human Performance**

Biomechanical underpinnings of human performance including the quantitative analysis of human motion in normal activities and in athletic performance. Students will learn modern motion capture methods. This course will require students to design and execute an independent project.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.

Lecture three hours per week, workshop/labs three hours per week.

BIOL 4317 [0.5 credit]**Neuroethology: The Neural Basis of Animal Behaviour**

Proximate mechanisms underlying animal behaviour. Focus on evolution of nervous systems in response to environmental selection pressures. Topics include: genetic and hormonal influences on behaviour (e.g. maternal care); unique sensory worlds (e.g. magnetic); various levels of neural integration, from simple reflexes to complex social behaviour.

Prerequisite(s): BIOL 3305 or BIOL 3306, or permission of the Department.

Lectures three hours a week.

BIOL 4318 [0.5 credit]**Adaptations to Extreme Environments**

Lectures, discussions and student presentations will be used to examine adaptations of animals to extreme environments (e.g. desert) or lifestyles (e.g. diving), at the physiological, biochemical and molecular levels. Emphasis on becoming familiar with the current primary literature.

Prerequisite(s): BIOL 3305, or permission of the Department.

Lectures/workshops three hours a week.

BIOL 4319 [0.5 credit]**Studies in Exercise Physiology**

Physiological mechanisms underlying human athletic performance. Exercise physiology and cardio-respiratory activity, metabolic regulation and musculoskeletal function. Practical experience will be gained in the workshop/laboratory based experimental sessions.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 3307 and fourth-year standing, or permission of the department.

Lectures two hours per week, workshop/labs three hours per week.

BIOL 4500 [0.5 credit]**The Biology of Birds**

Introduction to ornithology, the study of birds; the evolution of birds, migration, geographic variation, adaptations for flight, feeding, reproduction; extinction and preservation.

Prerequisite(s): BIOL 2001 or permission of the department.

Lectures three hours per week.

BIOL 4501 [0.5 credit]**The Taxonomy of Birds**

The taxonomy of birds and species identification are learned through the use of study skins in the lab. Field excursions allow first-hand study of various species. Participants must acquire a pair of binoculars and one of the recommended field guides.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2001 or permission of the department.

Laboratory/field excursions four hours per week.

BIOL 4502 [0.5 credit]**Herpetology**

Herpetology is the study of amphibians and reptiles. The behaviours, physiological ecology, conservation and identification of amphibians and reptiles will be examined through lectures, seminars and hands-on activities.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2001.

Lectures or seminars three hours per week.

BIOL 4503 [0.5 credit]**Fish Ecology, Conservation and Management**

Introduction to the diversity and environmental biology of the world's fishes. Applied issues in fisheries management, conservation, and aquaculture. Workshops expose students to techniques in fisheries science through hands-on demonstrations and field excursions.

Includes: Experiential Learning Activity

Prerequisite(s): BIOL 2600 or permission of the Department.

Lectures/seminars two hours a week, plus labs/workshops two hours a week.

BIOL 4504 [0.5 credit]**Ecology of Freshwater Invertebrates**

Overview of the diversity and ecology of freshwater invertebrates. Aquatic invertebrates from local bodies of water will be sampled and identified in the lab. Experiments on the ecology and behaviour of model species of freshwater invertebrates will also be conducted in the lab.

Includes: Experiential Learning Activity
Prerequisite(s): BIOL 2001 and BIOL 2600.
Seminar and lab four hours a week.

BIOL 4505 [0.5 credit]**Coral Reefs**

Examining the diversity of life on coral reefs and their interactions across ecological scales, from the biochemistry of zooxanthellae symbiosis to landscape scale trophodynamics, reticulate evolution, and reef fisheries. Emphasis is on synthesis writing drawn from the current primary literature.

Prerequisite(s): BIOL 2600.
Lectures/seminars three hours a week

BIOL 4506 [0.5 credit]**Cactus Biology**

Covers the cactus family over its entire range, including most of the western hemisphere, with discussion on their anatomy, physiology, ecology, evolution, and classification. Topics include how cacti are both typical flowering plants in some regards, and atypical in others.

Prerequisite(s): BIOL 2002.
Lectures/seminars three hours a week

BIOL 4507 [0.5 credit]**Ecological Parasitology**

Key concepts in the ecological study of parasites and pathogens, underpinned by evolutionary thinking and relevant to fundamental and applied questions of co-evolution, disease ecology, epidemiology, emerging infectious diseases, environmental parasitology, evolutionary transitions, host species range, immunity, resistance, tolerance, transmission mode, and virulence.

Prerequisite(s): BIOL 2600 and one of the following: BIOL 3601, BIOL 3604, BIOL 3609, BIOL 3611, BIOL 3612, BIOL 3801, BIOL 3802, BIOL 3804.
Lectures or seminars 3 hours per week.

BIOL 4602 [0.5 credit]**Evolutionary Applications across Disciplines: From Medicine to Conservation**

Evolutionary principles contributing to advancements across fields including medicine, agriculture, conservation, climate change, and engineering. Topics include evolution of virulence, causes of variation in human health, evolution of resistance to pesticides, interventions for recovery of species at risk, and biomimetic modeling in engineering and architecture.

Prerequisite(s): BIOL 1104 and third-year standing.
Lectures/workshops three hours per week.

BIOL 4603 [0.5 credit]**Insect Evolution and Biology**

Major questions on the origin, evolution and adaptation of structures and physiology of terrestrial arthropods, especially insects.

Includes: Experiential Learning Activity
Prerequisite(s): BIOL 3004, or permission of the Department.
Lectures two hours a week, laboratory four hours a week.

BIOL 4604 [0.5 credit]**Landscape Ecology**

Landscape ecology is the study of how landscape structure affects the abundance and distribution of organisms. The focus of this course is on research methods and results in landscape ecology. Applications in forestry, agriculture, and species conservation.

Prerequisite(s): BIOL 2600 or equivalent, BIOL 3601 or BIOL 3602 or BIOL 3608 or equivalent, and fourth-year standing in Biology, Geography, or Environmental Sciences.
Lecture three hours a week.

BIOL 4802 [0.5 credit]**Advanced Animal Behaviour**

Contemporary issues in behavioural ecology. Topics may include the relevance of behavioural ecology to conservation biology, to new insights into human social behaviour, and will be selected through consultation between professor and students.

Prerequisite(s): BIOL 3802 or BIOL 3804, or permission of the Department.
Lectures or workshops three hours a week.

BIOL 4810 [0.5 credit]**Education Research in Biology**

An introduction to the science of teaching and learning in biology. Students will be introduced to the foundational concepts in, and tools of, Discipline-Based Education Research (DBER) and will conduct their own DBER research project.

Includes: Experiential Learning Activity
Prerequisite(s): 4th year standing, or permission of the department This course can only be used by science students as a free elective.
Also offered at the graduate level, with different requirements, as BIOL 5810, for which additional credit is precluded.
Seminar three hours per week, classroom-based research one hour per week.

BIOL 4901 [0.5 credit]**Directed Special Studies**

Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Prerequisite(s): permission of the Department. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

BIOL 4902 [0.5 credit]**Topics in Biology II**

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): fourth-year standing in a Biology program or permission of the Department.

Lecture, seminars, or workshops three hours per week.

BIOL 4905 [1.0 credit]**Honours Workshop**

Within the context of an active learning environment, students participate in a variety of activities which may include literature reviews and critiques, media releases and response papers, oral presentations, and posters. Projects are focused on an area of biological research of interest to the student.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4907 and BIOL 4908.

Prerequisite(s): fourth-year standing in an Honours biology program and permission of the Department.

Workshops three hours per week.

BIOL 4907 [1.0 credit]**Honours Essay and Research Proposal**

An independent critical review and research proposal, using library resources, under the direct supervision of a Faculty advisor. Evaluation is based on a written report and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4905 and BIOL 4908.

Prerequisite(s): fourth-year standing in an Honours Biology program and permission of the Department.

BIOL 4908 [1.0 credit]**Honours Research Thesis**

An independent research project undertaken in the field and/or the laboratory, under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for BIOL 4905 and BIOL 4907.

Prerequisite(s): fourth-year standing in an Honours biology program with a minimum CGPA of 8.0 in the major or permission of the Department.

Business (BUSI)

Business (BUSI) Courses**Notes:**

1. Some Business courses are open to students in select programs only. Please refer to the current BUSI Course Priority List found at: sprott.carleton.ca/registration
2. B.Com. and B.I.B. students should use Business (BUSI) prefix for registering in courses that are cross-listed.
3. Not all courses listed are offered in a given year; consult the class schedule at central.carleton.ca for a list of current course offerings.

BUSI 1001 [0.5 credit]**Principles of Financial Accounting**

Discussion of the concepts of asset valuation and income measurement underlying the preparations and interpretation of financial statements.

Precludes additional credit for BUSI 1003 and BUSI 1004.

Prerequisite(s): second-year standing, or permission of the Sprott School of Business.

Lecture three hours a week.

BUSI 1002 [0.5 credit]**Management Accounting**

An introduction to the use of accounting data for the purposes of planning and control of operations.

Precludes additional credit for BUSI 1003 and BUSI 1005.

Prerequisite(s): second-year standing and BUSI 1001, or permission of the Sprott School of Business.

Lecture three hours a week.

BUSI 1003 [0.5 credit]**Survey of Accounting**

Introduction to accounting information, the basic accounting cycle, and consideration of selected financial statement topics. Analysis of cost behavior and the uses and limitations of accounting information in planning, controlling and decision-making processes.

Precludes additional credit for BUSI 1001, BUSI 1002, BUSI 1004 and BUSI 1005. No credit for students in B.Com., BIB or B.Econ. (Honours Economics, Concentration in Financial Economics).

Lecture three hours a week.

BUSI 1004 [0.5 credit]**Financial Accounting for Business Students**

Introduction to accounting for business organizations. The student will be introduced to the accounting process and the preparation and analysis of the balance sheet, income statement, and cash flow statement.

Precludes additional credit for BUSI 1001 and BUSI 1003.

Prerequisite(s): BUSI 1701 or BUSI 1800. Restricted to B.Com. and B.I.B. students.

Lectures three hours a week.

BUSI 1005 [0.5 credit]**Managerial Accounting for Business Students**

Introduction to the development and use of accounting information within a business organization for effective management including: planning, directing, motivating, and controlling activities and behaviours.

Precludes additional credit for BUSI 1002 and BUSI 1003.

Prerequisite(s): BUSI 1004. Restricted to B.Com. and B.I.B. students.

Lectures three hours a week.

BUSI 1401 [0.5 credit]**Foundations of Information Systems**

This course helps student to understand the critical role of information systems in organizations and their impact on social and ethical issues. Covers fundamental tools and skills for the development and management of information systems and business analytics in organizations.

Precludes additional credit for BUSI 2400.

Lecture three hours a week.

BUSI 1402 [0.5 credit]**Introduction to Business Information and Communication Technologies**

Introduction to ICT in organizations. Topics may include spreadsheets, databases, statistical software, website design and implementation, collaboration software including wikis, blogs and social networking, GPS, m-Commerce.

Lectures three hours a week.

BUSI 1701 [0.5 credit]**Introduction to International Business**

Introduction to the principles and practices of international business. Topics include the impact of culture and the political, economic, and legal systems on global strategy, international institutions, theories of cross-border trade, and the characteristics and effects of regional trade blocs.

Precludes additional credit for BUSI 2701, BUSI 2703.

Prerequisite(s): restricted to B.I.B. students.

Lecture three hours and tutorial one hour a week.

BUSI 1800 [0.5 credit]**Introduction to Business**

Introduction to contemporary businesses in a complex economy, their role in the society, their history. The various functions that come together to define a business will be examined. All forms of business communications emphasized.

Lectures three hours and tutorial one hour a week.

BUSI 1801 [0.5 credit]**Foundations of Business**

Introduction to contemporary businesses in a complex economy and their role in the society. An overview of the various functions that come together to define a business will be examined.

Precludes additional credit for BUSI 1800. No credit in B.Com. or B.I.B programs.

Lectures three hours a week.

BUSI 1995 [0.0 credit]**Employability Passport I**

An introduction to the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students registered in B.Com. or B.I.B.

Participation in employability events and initiatives throughout the year.

BUSI 1996 [0.0 credit]**Employability Passport BIB I**

An introduction to the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students registered in B.I.B. Participation in employability events and initiatives throughout the year.

BUSI 1997 [0.0 credit]**Employability Passport BIB I**

An introduction to the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students registered in B.I.B. Participation in employability events and initiatives throughout the year.

BUSI 2001 [0.5 credit]**Intermediate Accounting I**

An examination of accounting and reporting issues related primarily to asset valuation and revenue recognition.

Prerequisite(s): second-year standing, and BUSI 1004 or BUSI 1001 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 2002 [0.5 credit]**Intermediate Accounting II**

An examination of accounting and reporting issues related primarily to liabilities and equities.

Precludes additional credit for BUSI 2506.

Prerequisite(s): BUSI 2001, and BUSI 2504 or BUSI 2503 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 2005 [0.5 credit]**Income Tax Fundamentals**

A foundation course that aims to introduce the fundamental concepts of income tax laws and regulations as significant elements in the planning and decision making process of taxpayers and managers. Problems, issues and planning associated with the Income Tax Act are discussed.

Precludes additional credit for BUSI 3005 and BUSI 4005.

Prerequisite(s): BUSI 1001 or BUSI 1004 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 2101 [0.5 credit]**Organizational Behaviour**

Models of individual and small group behaviour in organizations. Topics include motivation, communication, job design, leadership and group dynamics to provide systematic explanations of employee and managerial behaviour in organizations.

Precludes additional credit for BUSI 2121, BUSI 2702, BUSI 3602.

Prerequisite(s): second-year standing. Restricted to B.Com. students.

Lectures three hours, and tutorial one and a half hours a week.

BUSI 2121 [0.5 credit]**Introduction to Organizational Behaviour**

Individual and small group behaviors in organizations and management of the same.

Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 3602.

Prerequisite(s): second-year standing.

Lecture three hours a week.

BUSI 2204 [0.5 credit]**Basic Marketing**

Basic problems and practices in marketing. Marketing planning tools and strategies of firms.

Precludes additional credit for BIT 2002 and BUSI 2208.

Lecture three hours a week.

BUSI 2208 [0.5 credit]**Introduction to Marketing**

Overview of the marketing function within the firm.

Introduction to key marketing concepts and principles; business environment analysis, strategic decision making (segmentation, targeting, positioning), marketing mix planning (product, price, place promotion). Analysis of marketing problems using cases and major project.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2204.

Prerequisite(s): BUSI 1004, ECON 1001 and ECON 1002 (or ECON 1000), and one of BUSI 1701, PSYC 1002, SOCI 1005.

Lecture three hours a week.

BUSI 2301 [0.5 credit]**Introduction to Supply and Operations Management**

Concepts, models, and managerial issues in planning, designing, operating and controlling systems across supply chains for the provision of goods and services. Emphasis on basic ideas and tools.

Precludes additional credit for BUSI 3300 (no longer offered).

Prerequisite(s): second-year standing. Restricted to selected Sprott programs.

Lecture three hours a week.

BUSI 2400 [0.5 credit]**Foundations of Information Systems**

This course helps student to understand the critical role of information systems in organizations and their impact on social and ethical issues. Covers fundamental tools and skills for the development and management of information systems and business analytics in organizations.

Lecture three hours a week.

BUSI 2401 [0.5 credit]**Introduction to Data Analytics**

This course prepares students to gather, manipulate, and clean data from a variety of sources within a programming environment. Students will be introduced to visual data exploration and the deployment of data-driven visual storytelling. Topics include: APIs, Data Science Programming, SQL, Relational/NoSQL databases, data visualization.

Prerequisite(s): BUSI 1401.

Lecture three hours a week.

BUSI 2402 [0.5 credit]**Business Applications Development**

Introduction to programming. Fundamentals of structured and object-oriented programming using an OO programming language. Treatment of objects, abstraction and inheritance, event-driven programming, iteration, sequence and selection. Consideration of algorithms for searching, sorting, string processing and numerical analysis. Emphasis on the development of business applications.

Precludes additional credit for COMP 1006 and COMP 1406.

Prerequisite(s): second-year standing.

Lecture three hours and tutorial one hour a week.

BUSI 2503 [0.5 credit]**Introduction to Finance**

Basic issues and practices in finance. Survey of business firms' financing, investment, and payout decisions. Emphasis on understanding the principals, resources and trade-offs in the financial area of a business.

Precludes additional credit for BUSI 2504 and

ECON 3050. No credit for students in B.Com., BIB or B.Econ. (Honours Economics, Concentration in Financial Economics).

Prerequisite(s): second-year standing.

Lecture three hours a week.

BUSI 2504 [0.5 credit]**Business Finance I**

Business firms' financing, capital investment, and dividend policy decisions, cost of capital and short-term asset management problems.

Precludes additional credit for BUSI 2503, ECON 3050.

Prerequisite(s): BUSI 1005, and ECON 1001 and ECON 1002 (or ECON 1000) or ECOR 3800. Restricted to selected Sprott programs.

Lecture three hours and optional tutorial.

BUSI 2505 [0.5 credit]**Business Finance II**

Capital investment and financing decisions in the context of risk and return tradeoffs. Primary and derivative securities, and their role in risk management. Mergers, corporate restructuring, the theory of principal-agent relationships, and financial planning, forecasting, and control.

Prerequisite(s): BUSI 1002 or BUSI 1005, and BUSI 2504 (with a grade of C or higher in each), ECON 1001 and ECON 1002 (or ECON 1000), and MATH 1009 (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 2506 [0.5 credit]**Financial Statement Analysis**

Analysis and interpretation of an entity's financial statements and annual report from a user perspective. Ratio analysis is used to analyze firm performance and make forecasts of future performance.

Precludes additional credit for BUSI 2002.
Prerequisite(s): BUSI 2504 with a grade of C or higher.
Lectures three hours a week.

BUSI 2601 [0.5 credit]**Business Law**

The legal system and legal ordering as they affect those engaged in business activities. Emphasis on the law of tort, law of contract, agency and bailment, business associations (partnerships/proprietorships/corporations) and real estate.

Lecture three hours a week.

BUSI 2701 [0.5 credit]**Fundamentals of International Business**

Introduction to the context and operation of international business. Topics include international trade theory, trade agreements and blocs, international finance, global marketing, international human resource management and global strategy.

Precludes additional credit for BUSI 1701, BUSI 2703.
Prerequisite(s): BUSI 1800.
Lecture three hours a week.

BUSI 2702 [0.5 credit]**Introduction to International Management**

Applies principles of organizational behavior and organizational theory to the operations of international businesses. Includes discussion of appropriate strategies and structures. Introduces concepts of cross-cultural communication.

Precludes additional credit for BUSI 2101, BUSI 2121, BUSI 3602.
Prerequisite(s): second-year standing in B.I.B. and BUSI 1701.
Lectures three hours a week.

BUSI 2703 [0.5 credit]**Introduction to International Business**

Introduction to contemporary businesses in a complex economy, their role in society and their history. Examination of the various functions that come together to define a business with an emphasis on all forms of business communications.

Precludes additional credit for BUSI 1701, BUSI 2701.
Prerequisite(s): second-year standing. No credit for students in B.Com. or BIB.
Lectures three hours per week.

BUSI 2800 [0.5 credit]**Entrepreneurship**

Overview of the basics of entrepreneurship, with emphasis on idea generation and identification, team building, business models, initial strategies and feasibility. A number of organization types will be studied.

Prerequisite(s): Second-year standing.
Lecture three hours a week.

BUSI 2819 [0.5 credit]**Sustainability Accounting and Social Finance**

This course offers different avenues for in-depth explorations in sustainability accounting, impact measurement and social finance for undergraduate students. Each module covers a special topic within responsible business, such as impact measurement, responsible finance, impact investing, responsible and ESG investing, sustainability accounting.

Prerequisite(s): second-year standing.
Lecture three hours a week.

BUSI 2995 [0.0 credit]**Employability Passport II**

An intermediate course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 1995.

Participation in employability events and initiatives throughout the year.

BUSI 2996 [0.0 credit]**Employability Passport BIB II**

An intermediate course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 1996 and BUSI 1997.

Participation in employability events and initiatives throughout the year.

BUSI 2997 [0.0 credit]**Employability Passport BIB II**

An intermediate course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 1996 and BUSI 1997.

Participation in employability events and initiatives throughout the year.

BUSI 3001 [0.5 credit]**Accounting for Business Combinations**

Accounting problems associated with business combinations, with attention to the preparation of consolidated financial statements. Discussion may extend to financial reporting and diversified companies, reorganizations, etc. Selection of topics may vary from year to year.

Prerequisite(s): BUSI 2002 with a grade of C- or higher.

Lecture three hours a week.

BUSI 3005 [0.5 credit]**Taxation I**

Federal income tax laws and regulations and their impact on an individual's financial and business decisions.

Problems, issues and planning associated with the Income Tax Act and concerned with the computation of taxable income and taxes payable by an individual are discussed.

Precludes additional credit for BUSI 2005.

Prerequisite(s): BUSI 2001 with a grade of C- or higher.

Lecture three hours a week.

BUSI 3007 [0.5 credit]**Auditing I**

Auditing theory, methodology and application.

Precludes additional credit for BUSI 4007 (no longer offered).

Prerequisite(s): BUSI 2001.

Lecture three hours a week.

BUSI 3008 [0.5 credit]**Intermediate Management Accounting and Control**

The use of accounting information for cost control and performance evaluation. Emphasis is on cost accumulation systems, performance evaluation, control models and analytical tools.

Prerequisite(s): BUSI 1002 or BUSI 1005 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3040 [0.5 credit]**Data Analytics and Information Systems for Accounting**

Data analysis in accounting, working with and making sense of big data using various data analysis tools.

Specific topics include; data collection, cleaning, analyzing, visualization, and decision making in different areas of accounting.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 1401 or BUSI 2400, and BUSI 3007 with a grade of C- or higher in each.

Lecture three hours a week.

BUSI 3102 [0.5 credit]**Introduction to Human Resources Management**

Human Resource Management function in large formal organizations. Topics include human resources planning, recruitment, selection, performance evaluation, career development and training, compensation and benefits and the role of the professional personnel manager.

Prerequisite(s): second-year standing, and one of BUSI 2101, BUSI 2121, BUSI 2702, BUSI 3602, PSYC 2801.

Lectures three hours a week.

BUSI 3103 [0.5 credit]**Introduction to Organization Theory**

Macro-organization theory. Structuring of organizations in a complex global economy. Effects of the external environment, technology, culture and organizational goals on the structure, processes and effectiveness of the organization.

Prerequisite(s): second-year standing, and one of BUSI 2101, BUSI 2121, BUSI 2702, PSYC 2801.

Lectures three hours a week.

BUSI 3104 [0.5 credit]**Managing Individual Performance**

Managing the performance of self and others. Topics include self awareness, motivation, leadership, communication, diversity, and creativity. Extensive use is made of self-assessments and experiential learning.

Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 3105 [0.5 credit]**Managing and Motivating Teams**

Principles of working in and managing teams. Topics include self-awareness, team formation, team development, team dynamics, team leadership and team motivation.

Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 3106 [0.5 credit]**Managing Conflict and Negotiation**

Analysis of the sources and forms of conflict and effective approaches to managing conflict. Exploration of the effectiveness of various strategies of negotiations.

Prerequisite(s): BUSI 2101, BUSI 2121, BUSI 2702, or PSYC 2801 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3117 [0.5 credit]**Developing Creative Thinking**

Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization).

Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C- or higher in each) or permission of the Sprott School of Business. Lecture three hours a week.

BUSI 3204 [0.5 credit]**Digital Marketing**

Introduction and assessment of key new marketing tools and approaches, including internet marketing, relationship marketing, direct marketing; effective adoption and implementation of these tools and approaches across industries and organizations.

Prerequisite(s): BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each). Lecture three hours a week.

BUSI 3205 [0.5 credit]**Marketing Communications**

Promotion as communication process and marketing tool. Integrating advertising, direct/digital marketing, interactive media, sales promotion, public relations, personal selling through strategic planning (research, budgeting, organizing, creative and media strategy), execution, and campaign evaluation. Regulatory, ethical, social issues considerations.

Prerequisite(s): BUSI 2208 or BUSI 2204 (with a grade of C- or higher in each). Lecture three hours a week.

BUSI 3207 [0.5 credit]**Marketing Research**

Concepts essential for understanding and conducting applied marketing research. Methods for collecting, analyzing, and interpreting data relevant to marketing decision-making. Experience in research techniques through case studies, exercises and project.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3100.

Prerequisite(s): BUSI 2204 or BUSI 2208 (with a grade of C or higher in each), STAT 2601 or STAT 2606 (with a grade of C- or higher in each). Lecture three hours a week.

BUSI 3208 [0.5 credit]**Business-to-Business Marketing**

Theories and practice of marketing in business-to-business markets with emphasis on high technology businesses, including strategic marketing management, buyer behaviour and competitive analysis, sales management, new product management, and international issues.

Prerequisite(s): BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each). Lecture three hours a week.

BUSI 3209 [0.5 credit]**Consumer Behaviour**

Introduction to the application of psychological theories and methodologies to consumer behaviour. How consumer behaviour is shaped by internal influences. Topics include perception, learning, memory, motivation, affect, personality, the self, attitudes and decision-making. Precludes additional credit for BUSI 4206 (no longer offered).

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C or higher in each). Lecture three hours a week.

BUSI 3210 [0.5 credit]**Personal Selling**

Provides an introduction to and application of the principles of personal selling for persons pursuing any vocation, as well as those aspiring to careers in Marketing. Introduces basic concepts of professional selling including: customer analysis, communication skills, effective openings and closings, and customer relations.

Prerequisite(s): BUSI 2204 or BUSI 2208 with a grade of C- or higher.

Lecture 3 hours a week.

BUSI 3301 [0.5 credit]**Global Supply Chain Management**

Introduction to management of global supply chain. Topics include strategies for planning and coordinating of all activities involved in procurement, conversion, and logistics in the global environment.

Precludes additional credit for BUSI 4303 (no longer offered).

Prerequisite(s): second-year standing, and BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3305 [0.5 credit]**Distribution Channels and Logistics**

In-depth examination of distribution channels and logistics; roles and interrelations in the achievement of marketing mix objectives and in creating competitive advantage. Channels design and management, managing logistics, warehousing, packaging and material handling, new trends in channels and logistics.

Prerequisite(s): third-year standing, and BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3308 [0.5 credit]**Simulation Modeling and Analytics**

Concepts of computer simulation for predictive and prescriptive analytics through case studies, worked examples and hands-on projects. Emphasizes static simulations with spreadsheets, discrete-event, and agent-based simulations with specialized software. Input modeling, model design, experimental design, analysis of outputs.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, and BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture two hours and tutorial two hours a week.

BUSI 3309 [0.5 credit]**Project Management**

Identification, selection, initiation, and organization of projects; risk assessment; project scheduling, performance monitoring and control, and termination. Emphases on foundations, principles and supporting techniques.

Prerequisite(s): third-year standing, and STAT 2601 or STAT 2606.

Lecture three hours a week.

BUSI 3400 [0.5 credit]**Database Design**

Information management, database administration, Entity-Relationship Model, database development life cycle: planning, analysis, design, implementation, and maintenance of database management systems. Construction of a database. Introduction to SQL, distributed databases, object-oriented databases, and data warehousing.

Precludes additional credit for COMP 3005.

Prerequisite(s): BUSI 1401 or BUSI 2400 (with a grade of C or higher in each).

Lecture three hours and tutorial one hour a week.

BUSI 3401 [0.5 credit]**Applications Development for Online Environments**

Analysis, design and implementation of electronic business systems. Topics include advanced object-oriented programming, advanced SQL programming, XML, using ASP.NET, MTS and SQL Server.

Precludes additional credit for BUSI 4401 (no longer offered).

Prerequisite(s): BUSI 2402 and BUSI 3400, or COMP 3005 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3402 [0.5 credit]**Systems Analysis and Design**

Methods of analysis of computer-based information systems. The systems development life cycle, planning, analysis, design, implementation and maintenance. Structured and object-oriented methods will be used. Use of a CASE tool.

Precludes additional credit for SYSC 3100, BUSI 3403, (no longer offered) and BUSI 3404 (no longer offered).

Prerequisite(s): one of BUSI 1401, BUSI 2400, COMP 2404, SYSC 2004 (with a grade of C or higher in each).

Lecture three hours and tutorials one hour a week.

BUSI 3405 [0.5 credit]**Enterprise Architecture**

Exploration of the significance of cross-functional business processes in the context of e-business transformation.

Includes process analysis and modeling techniques.

Also considers the application of enterprise resource planning systems, workflow technologies, intranets, and extranets to facilitate process flows inside and outside the organization.

Prerequisite(s): BUSI 1401 or 2400, and BUSI 3103 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3406 [0.5 credit]**Business Analytics Principles**

Evolution of Decision Support Systems. Decision Making. Business Intelligence. Foundation of Business Analytics. Lifecycle & Best Practices. Strategy, platforms and Architecture. Data Sensemaking. Model Development.

Precludes additional credit for BUSI 4406.

Prerequisite(s): BUSI 2401 and STAT 2602.

Lecture 3 hours a week.

BUSI 3434 [0.5 credit]**Data Visualization**

Visual representation and presentation of data to facilitate understanding. This includes visual data exploration, perception, interpretation, and communication in exploratory and declarative situations. Practical skill development using current data visualization software.

Prerequisite(s): BUSI 2401, STAT 2602.

Lecture three hours a week.

BUSI 3500 [0.5 credit]**Applied Corporate Finance**

An examination of the major issues in corporate finance and applied financial management. Topics include: introduction to portfolio theory, the capital asset pricing model, cost of capital, capital structure and dividend policy, lease financing, capital budgeting under uncertainty, mergers and consolidations.

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3502 [0.5 credit]**Investments**

Procedures and methods of investment analysis. Stock and bond markets. Government regulation of securities markets. Valuation of common stocks and fixed income securities. Options, warrants, convertibles and commodities.

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3512 [0.5 credit]**Derivatives**

Derivative instruments and their use for speculation and hedging. Analysis of different markets where instruments trade, and their characteristics. Pricing models highlighted to determine how individuals and corporations can better manage risk; exotics and newer innovations.

Precludes additional credit for BUSI 4512 (no longer offered).

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3600 [0.5 credit]**Entrepreneurial Strategies**

Within the changing environment, an examination of entrepreneurial strategies related to different functional areas for new ventures and small businesses.

Prerequisite(s): BUSI 2800 with a grade of C- or higher.

Lecture three hours a week.

BUSI 3602 [0.5 credit]**Designing Organizational Systems: An Overview**

Key models and theories of organizational strategy, structure, processes, effectiveness, and individual and group behavior in organizations. Organizational structure, goals, and effectiveness; leadership, motivation and job design.

Precludes additional credit for BUSI 2101, BUSI 2702, BUSI 2121. No credit for students in B.Com. or B.I.B. programs.

Prerequisite(s): third-year standing in the B.P.A.P.M. program.

Lecture three hours a week.

BUSI 3611 [0.5 credit]**Managing the Family Enterprise**

How family businesses are different, what makes them different and how to effectively manage these differences. Challenges arising from the tension between family and business pressures from governance, management and succession planning perspectives.

Prerequisite(s): third year standing, and BUSI 1005 or BUSI 1002, and one of BUSI 2101, BUSI 2121, BUSI 2702.

Lecture three hours a week.

BUSI 3629 [0.5 credit]**Corporate Governance and Strategy**

The role of governance in organizations. Mission and vision statements, values and objectives. Shaping, implementation and evaluation of corporate strategy.

Management of risk and environmental analysis.

Precludes additional credit for BUSI 4609, BUSI 4709. No credit in B.Com. or B.I.B. programs.

Prerequisite(s): Enrolment in the Post-Baccalaureate Diploma in Accounting, or BUSI 1001 and BUSI 1002, or equivalents.

Lecture three hours a week.

BUSI 3700 [0.5 credit]**Cross-cultural Communication**

Principles of communication across cultural boundaries are applied to both interpersonal and commercial interactions. Critical incidents and commentary are analyzed. Students submit periodic reports, evaluated by the instructor at Carleton.

Prerequisite(s): restricted to B.I.B. students who are participating in an academic exchange.

Online course.

BUSI 3701 [0.5 credit]**Practicum in International Business I**

Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 4719 and GINS 3930.

Prerequisite(s): Third-year standing in BIB and permission of the Sprott School of Business.

Experiential Learning Activity

BUSI 3702 [0.5 credit]**Practicum in International Business II**

Students will engage in an approved international experience, abroad or within Canada, that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 4719 and GINS 3931.

Prerequisite(s): third-year standing in BIB and permission of the Sprott School of Business.

Experiential learning activity

BUSI 3703 [0.5 credit]**International and Comparative Management**

The management of large organizations spanning national boundaries, including domestic firms with international markets, and multinational corporations. Difficulties of maintaining communication and control in international operations in disparate cultural settings.

Prerequisite(s): second-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 3704 [0.5 credit]**The Environment of International Business**

Theories linking environmental factors and business strategy as a basis for study of some major factors and institutions shaping international business strategy. International trade patterns, regionalization, shifts in international finance, research and development and transnational data flows.

Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C or higher in each), and ECON 1001 and ECON 1002 (or ECON 1000) (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3705 [0.5 credit]**International Buyer Behaviour**

Behaviour of end-consumers, business and government buyers, and investors in the international context. National, cross-national, and subnational segments and behaviour differences. Adaptation vs. standardisation strategies in the context of socio-psychological, legal, technological, international procurement rules, and other constraints and opportunities.

Prerequisite(s): third-year standing, BUSI 2204 or BUSI 2208, and BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 3706 [0.5 credit]**International Business Negotiations**

Introduction to theory and practice of negotiation in the international business context. Analysis of techniques of conflict resolution and improving ways to reach agreements.

Prerequisite(s): second-year standing, and BUSI 2701 or BUSI 2702 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 3800 [0.5 credit]**Business Case Analysis**

Analysis, solution and presentation of complex business issues through cases.

Includes: Experiential Learning Activity

Prerequisite(s): minimum 7.0 Major CGPA in B.Com. or B.I.B. and permission of the Sprott School of Business.

Lecture three hours and tutorial one hour a week.

BUSI 3810 [0.5 credit]**Business Development**

Business development, growth and expansion through financing activities and new customer acquisition.

Prerequisite(s): BUSI 2800 with a grade of C- or higher.

Lecture three hours a week.

BUSI 3820 [0.5 credit]**Practicum in Business Design**

Students will apply entrepreneurial concepts and engage in designing an entrepreneurial project. Students will prepare in groups a business plan, including in-depth analysis and recommendations.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, and BUSI 2800 with a grade of C- or higher.

Lecture three hours a week.

BUSI 3995 [0.0 credit]**Employability Passport III**

An advanced course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 2995.

Participation in employability events and initiatives throughout the year.

BUSI 3996 [0.0 credit]**Employability Passport BIB III**

An advanced course in the knowledge and tools required for a career in Business.

Prerequisite(s): BUSI 2996 and BUSI 2997.

BUSI 3997 [0.0 credit]**Employability Passport BIB III**

An advanced course in the knowledge and tools required for a career in Business.

Prerequisite(s): BUSI 2996 and BUSI 2997.

BUSI 3999 [0.0 credit]**Co-operative Work Term**

This course covers the deliverables associated with the co-op work term such as the site visit, work term report submission and employer evaluation.

Includes: Experiential Learning Activity

Prerequisite(s): This course is for students on a university approved co-op work term.

BUSI 4005 [0.5 credit]**Taxation II**

An intensive review of federal income tax laws and regulations as significant elements in the planning and decision making process of taxable Canadian corporations. Emphasis on the tax planning function of corporate management and the associated accounting and reporting aspects.

Precludes additional credit for BUSI 2005.

Prerequisite(s): BUSI 3005 with a grade of C- or higher.

Lecture three hours a week.

BUSI 4008 [0.5 credit]**Advanced Management Accounting and Control**

Builds on concepts covered in management and cost accounting courses. Integrates relevant issues from other functional areas: strategic uses of cost management, budgeting, and performance evaluation systems in managerial planning and control.

Prerequisite(s): BUSI 3008 with a grade of C- or higher.

Lecture three hours a week.

BUSI 4104 [0.5 credit]**Strategic Human Resources Management**

Systems, strategies and practices used to effectively leverage human capital in organizations. How to think strategically about managing human assets, and what must be done to successfully implement these systems, strategies and practices.

Prerequisite(s): BUSI 3102 and BUSI 3103 (with a grade of C- or higher in each).

Lecture three hours per week.

BUSI 4105 [0.5 credit]**Managing Change**

An overview of current thinking about change management. Topics covered include understanding the forces for and barriers to change, diagnosing the environment around change and implementing change.

Prerequisite(s): third-year standing, and one of BUSI 2101, BUSI 2702, BUSI 3602, PSYC 2801 (with a grade of C- or higher in each).

Lectures three hours a week.

BUSI 4108 [0.5 credit]**Organizational Learning**

Contemporary training and development challenges facing individuals, organizations, and communities and the role of information technology in enhancing individual and collective skills development, capabilities, core competencies, intellectual capital and competitiveness.

Prerequisite(s): BUSI 3103 or BUSI 3602 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4111 [1.0 credit]**Training and Development**

Emphasizes contingency approach to training and development; relevant to organizations of all sizes and resource capacities. Effective training and development is conceptualized as a process that integrates extensive front and back-end planning, implementation, and evaluation activities.

Prerequisite(s): third-year standing, and one of BUSI 2101, BUSI 2121, BUSI 2702 (with a grade of B- or higher in each), and permission of the Sprott School of Business.

Lecture three hours and tutorial one hour per week.

BUSI 4112 [0.5 credit]**Organizational Leadership**

Critical examination of theories of leadership and trends in contemporary research; discussion of practical methods for building leadership capacity.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, and one of BUSI 2101, BUSI 2702, BUSI 3602, PSYC 2801 (with a grade of C- or higher in each).

Lecture and field work as needed.

BUSI 4117 [1.0 credit]**Creative Thinking**

Increases student skills in areas beyond technical expertise, with a focus on the importance of fluidity, risk taking, and idea generation. Emphasis on creativity as a process, with exposure to various techniques and concepts including Design Thinking at multiple levels (individual, group, organization).

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3117B taken prior to 2020/21.

Prerequisite(s): third-year standing, and BUSI 2101 or BUSI 2702 (with a grade of C- or higher in each), and permission of the Sprott School of Business.

Lecture three hours a week.

BUSI 4120 [0.5 credit]**Environmental Sustainability Management**

This course involves guest lectures, class discussions and group assignments evaluating the role of business in environmental problems. The course will delve into current conundrums of the role of business models to mitigate harm and adapt to change in search for solutions to environmental issues.

Prerequisite(s): BUSI 3119 and fourth-year standing.

Restricted to BCom, BIB and students registered in any of Sprott's Minor in Business offerings.

Lecture three hours a week.

BUSI 4129 [0.5 credit]**Managing the Arts**

Challenges of managing arts organizations with emphasis on the changing environment of arts consumption and funding. Tensions arising from blending artistic and aesthetic dimensions with functional considerations when judging organizational and personal issues form a continuing theme.

Prerequisite(s): third year standing.

Also offered at the graduate level, with different requirements, as MGMT 5129, for which additional credit is precluded.

Lecture three hours a week.

BUSI 4201 [0.5 credit]**Marketing Metrics**

An overview of essential marketing metrics used for enhancing marketing decisions. The course consists of seven core modules: share metrics, margins and profits, pricing, product and portfolio management, sales force management, promotion profitability, and customer profitability.

Prerequisite(s): BUSI 1005 and BUSI 2208.

Lecture three hours a week.

BUSI 4203 [0.5 credit]**Marketing In Not-for-Profit Organizations**

Theories and practices of marketing in not-for-profit organizations including government. Similarities and differences between marketing in not-for-profit and for-profit organizations, and the key issues faced by marketers in developing marketing strategies in not-for-profit organizations.

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 4205 [0.5 credit]**International Marketing Strategy**

The marketing function in international markets from a strategic and managerial perspective. Environments of foreign markets in relation to marketing research, international branding and positioning, and product, price, distribution, and communication strategies. International expansion methods and foreign market evaluation and selection.

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4208 [0.5 credit]**Marketing Management**

In depth analysis and applications of the managerial aspects of marketing. Marketing strategy development and implementation theory and practice.

Prerequisite(s): third year standing, BUSI 2208, and one of BUSI 3205 or BUSI 3207 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 4209 [0.5 credit]**Consumer Culture Theory**

Consumer behaviour from a macro and interpretive approach, as a social and cultural phenomenon; the relationships between consumers, the marketplace and cultural meaning.

Precludes additional credit for BUSI 4206 (no longer offered).

Prerequisite(s): third year standing, and BUSI 3209 (with a grade of C or higher).

Lecture three hours a week.

BUSI 4219 [0.5 credit]**Sustainability Marketing**

An overview of the roles of marketing in a sustainable society: advancing organizations' economic success while creating positive impacts on the environment and society; promoting consumers' sustainable lifestyle; advocating institutional change to facilitate sustainable production and consumption.

Includes: Experiential Learning Activity

Prerequisite(s): 3rd year standing. Restricted to BCom, BIB and students registered in any of Sprott's Minor in Business offerings.

lecture three hours a week

BUSI 4229 [0.5 credit]**Marketing in the Arts and Culture Sectors**

Advanced study of marketing within the arts and culture sectors. Facilitates sophisticated understanding of the knowledge and skills required for marketing managers to respond to changing market environments in order to bring arts and culture offerings to their target audiences.

Prerequisite(s): third year standing, and BUSI 2204 or BUSI 2208 (with a grade of C or higher in each).

Also offered at the graduate level, with different requirements, as MKTG 5229, for which additional credit is precluded.

Lecture three hours a week.

BUSI 4301 [0.5 credit]**Artificial Intelligence and Business Decision Models**

This course lays the foundations of Artificial Intelligence (AI) for business decision models using two currently dominant frameworks: Machine Learning and Deep Learning. This course discusses how to profit from AI through business model innovation in business domains including accounting, finance, marketing and supply chain.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2300, ECON 4005.

Prerequisite(s): third-year standing, BUSI 2401, and STAT 2601 or STAT 2606.

Lecture three hours and lab one hour per week.

BUSI 4302 [0.5 credit]**Management of Quality**

Quality concepts and methods surrounding the definition, mapping, implementation, improvement of business processes in organizations and global supply chains.

Prerequisite(s): third-year standing, BUSI 2301 (with a grade of C or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4304 [0.5 credit]**Procurement and Contracting**

Core supply chain procurement processes in the private and public sectors involved in the acquisition of goods and services, including sourcing, purchasing, contracting, supplier collaboration and relationship development and management. Emphasis on concepts, principles, practices, and techniques.

Prerequisite(s): third-year standing, and BUSI 2301 (with a C grade or higher).

Lecture three hours a week.

BUSI 4308 [0.5 credit]**Simulation Modeling and Analytics**

Concepts of computer simulation for predictive and prescriptive analytics through case studies, worked examples and hands-on projects. Emphasizes static simulations with spreadsheets, discrete-event, and agent-based simulations with specialized software. Input modeling, model design, experimental design, analysis of outputs.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3308.

Prerequisite(s): third-year standing; STAT 2601 or STAT 2606 with a grade of C- or higher.

Lecture two hours and tutorial two hours a week.

BUSI 4331 [0.5 credit]**Industry 4.0 Technologies and Applications**

This course shows how Industry 4.0 employs the IoT and AI technologies to achieve self-thinking supply chains. It demonstrates the use of Industry 4.0 in the transformation to smart industries. Lectures, demonstrations and hands-on exercises allow students to design, deploy and manage custom IoT solutions.

Precludes additional credit for BUSI 4431 (no longer offered).

Prerequisite(s): third year standing, and BUSI 2301 (with a grade of C or higher).

Lecture three hours a week and lab one hour a week.

BUSI 4400 [0.5 credit]**IS Management and Strategy**

Comprehensive treatment of current trends and management issues associated with information systems within organizations of local, national and international scope. Issues and techniques of information systems planning, administration, resource management and new technology adoption. Case studies are used.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, BUSI 1401 or BUSI 2400, and BUSI 3103 or BUSI 3602 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4404 [0.5 credit]**IT Infrastructure**

Challenges and issues managers face in assembling the infrastructure for IT service delivery. IT Service levels, data communications, networks (LAN, MAN, WAN, wireless), internetworking, SOA, web services, SaaS, server and storage virtualization, network security, business continuity and disaster recovery.

Prerequisite(s): third-year standing, and BUSI 1401 or BUSI 2400 (with a grade of C- or higher each).

Lecture three hours a week.

BUSI 4406 [0.5 credit]**Business Analytics**

Evolution of decision support systems. Business intelligence. Data mining and warehousing. Web analytics. Mobile apps for business analytics. Strategic use of information systems for competitive advantage.

Precludes additional credit for BUSI 3406.

Prerequisite(s): third-year standing, and BUSI 1401 or BUSI 2400 (with a grade of C or higher in each).

Lecture three hours a week.

BUSI 4407 [0.5 credit]**Business Analytics Methods**

Frameworks and quantitative methods used in predictive and prescriptive business analytics for decision-making with less risk and better outcomes. Practical applications with various analytical tools across a range of industries. Data integration; model formulation, implementation, solutions, and managerial insights.

Prerequisite(s): Third-year standing, BUSI 3406 (with a grade of C or higher).

Lecture two hours and lab two hours a week.

BUSI 4408 [0.5 credit]**Social Analytics**

Covers the process, tool and techniques necessary to acquire, clean and analyze text that has been generated on social platforms. Social network analysis, sentiment analysis, topic extraction, co-occurrence analysis.

Prerequisite(s): third year standing, BUSI 1401 or BUSI 2400, and BUSI 2208, and STAT 2601 or STAT 2606. Restricted to students enrolled in B.Com, BIB, and the B.Econ Economic Data Science Concentration.

Lecture three hours a week.

BUSI 4410 [0.5 credit]**Responsible Business Analytics**

Values in Technology, Data Governance, Data Anonymization and its limits, Ethical issues in HR and Talent Analytics, Disinformation, Misinformation, and Fake News, Bias & Fairness, Privacy, consent, and surveillance, Algorithm Colonialism, Legal Frameworks, The Nerd revolution.

Prerequisite(s): Fourth-year standing, BUSI 2401, and BUSI 4601.

Lecture 3 hours a week.

BUSI 4414 [0.5 credit]**Capstone in Business Analytics**

This is a capstone course for the Business Analytics concentration. The objective of this course is to be the concentration's culminating course allowing students to undertake a major BA project, while refining their knowledge by examining a set of advanced/specialized topics.

Prerequisite(s): Fourth-year standing and BUSI 2401.

Lecture 3 hours a week.

BUSI 4500 [0.5 credit]**Advanced Corporate Finance**

An in-depth examination of some of the major theoretical issues in corporate finance. This course requires analyses and presentations of both articles from the finance literature and case studies.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, BUSI 3500, BUSI 3502, BUSI 3512 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 4502 [0.5 credit]**Portfolio Management**

Analysis of investment requirements for individuals and institutional investors: liquidity, risk and return; portfolio design, construction, management and control; performance measurement; capital market theory.

Prerequisite(s): fourth-year standing, BUSI 3500, BUSI 3502, and BUSI 3512 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher).

Lecture three hours a week.

BUSI 4503 [0.5 credit]**Applied Portfolio Management**

Participants of the Sprott Student Investment Fund will be exposed to equity research, analysis, valuation, and portfolio composition. The course allows fund members to fully understand stock selection and fund management, and expose them to the methods and techniques used by industry.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3502 and permission of the Sprott School of Business.
Workshops three hours a week.

BUSI 4504 [0.5 credit]**International Finance**

Management of corporate finance as it is affected by the requirements of international business. Issues related to international acquisitions, global investments, volatile exchange rates and hedging techniques. Role of international markets in financing corporate activity. Precludes additional credit for BUSI 3504 (no longer offered) and BUSI 3505 (no longer offered).

Prerequisite(s): BUSI 2505 with a grade of C- or higher.
Lecture three hours a week.

BUSI 4505 [0.5 credit]**Global Financial Markets and Institutions**

Comprehensive view of the world's financial markets and institutions. The primary focus will be on the purpose and practice of financial institutions, and the specifics of the financial instruments available to the firm and investor.

Prerequisite(s): BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4510 [0.5 credit]**Mergers and Acquisitions**

The theory and practice of mergers and acquisitions; the best ways to analyze, design and implement mergers and acquisitions transactions. A highly practical planning-based approach to managing the acquisition process will be employed.

Prerequisite(s): BUSI 3500 and BUSI 3502 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher in each).
Lecture three hours per week.

BUSI 4511 [0.5 credit]**Fixed Income Analysis**

Valuation of fixed income securities and interest rate derivatives including bonds, mortgage- and asset-based securities. Analytic tools used in bond portfolio and interest rate risk management including yield curve construction, duration and convexity, and term structure models.

Prerequisite(s): BUSI 3502 and BUSI 3512 (with a grade of C- or higher in each), and STAT 2602 or STAT 2607 (with a grade of C- or higher in each).
Lecture three hours a week.

BUSI 4515 [0.5 credit]**Micro Finance**

Theory and practice of microfinance, its achievements and current challenges; basic skills needed to manage microfinance institutions. The future of microfinance and of financing for development in general. A mix of cases and lectures will be used.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing and enrollment in the Global Financial Management and Systems concentration in the BIB, BUSI 2505 (with a grade of C+ or higher), and STAT 2601 or STAT 2606 (with a grade of C- or higher in each).

Also offered at the graduate level, with different requirements, as FINA 5515, for which additional credit is precluded.

Lecture three hours a week.

BUSI 4601 [0.5 credit]**Business Ethics**

Use of ethical reasoning to analyze business decisions. The ethical content of these decisions. The role of ethics in business situations. Practice in ethical reasoning. Major ethical systems.

Precludes additional credit for BUSI 4705.

Prerequisite(s): fourth-year standing B.Com. Note that B.Com. concentration in International Business students require BUSI 4705.

Lectures three hours a week.

BUSI 4607 [0.5 credit]**Management of Technology and Innovation**

Integration of technology and strategy; design of technological strategy; development of new business around new technology; and management of corporate research and development, including pre-competitive consortia.

Prerequisite(s): third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C- or higher in each).

Lecture three hours a week.

BUSI 4608 [0.5 credit]**Canadian Business History**

The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business- government relations).

Also listed as HIST 3205.

Prerequisite(s): fourth-year standing in B.Com. or B.I.B.

Lectures three hours a week.

BUSI 4609 [0.5 credit]**Strategic Management**

Analysis and evaluation of the organization's corporate and business strategies; integration and synthesis of knowledge acquired in the program by application of acquired functional skills to strategic decision making. Precludes additional credit for BUSI 3629, BUSI 4709. Prerequisite(s): fourth-year standing in all B.Com. and successful completion of all 2000- and 3000- level courses in the Major requirement. Note that B.Com. concentration in International Business students require BUSI 4709. Lectures three hours a week.

BUSI 4704 [0.5 credit]**The Business Environment in Europe**

The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture.

Also listed as EURR 4704.

Precludes additional credit for EURR 4006 (no longer offered), BUSI 4604 (no longer offered).

Prerequisite(s): third-year standing.

Seminar three hours a week.

BUSI 4705 [0.5 credit]**Ethics and Cross-cultural Interaction**

Perceptions and behaviors that characterize interactions among individuals from various cultural backgrounds, with emphasis on ethical issues that may arise when business crosses cultural boundaries. Various systems, both organizational and individual, for dealing with contrasting expectations are discussed.

Precludes additional credit for BUSI 4601.

Prerequisite(s): fourth-year standing in B. Com.

(International Business Concentration) or B.I.B., and BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4706 [0.5 credit]**International Human Resource Management**

Theoretical and process issues in the recruitment, selection, training, evaluation and repatriation of personnel in multi-country organizations. Issues are examined from the perspective of organizations, expatriates and local employees of multinational firms.

Prerequisite(s): third-year standing, BUSI 3102, and one of BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4707 [0.5 credit]**Regionalism and Globalization**

Trends in globalization versus supra- and sub-national regionalism. Role of international institutions (e.g. OECD, WTO). Strategy adaptation and integration within and across trade blocs (e.g. NAFTA, EU, Mercosur, ASEAN). Strategies for sub-national markets with similarities across different countries.

Prerequisite(s): third-year standing in B.Com., B.I.B., or Minor in Business, and BUSI 2701 or BUSI 2702.

Lectures three hours a week.

BUSI 4708 [0.5 credit]**International Expansion and Operations**

Internationalization process. Methods of international expansion including exporting, greenfield investment, acquisition, joint venture, and licensing. Theories of international market selection, investment location, and market service.

Prerequisite(s): fourth-year standing, and BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4709 [0.5 credit]**Strategic Management for International Business**

Development and implementation of strategies within and across international markets. Emphasis on developing strategic perspectives that incorporate the environment, the state of the industry, and the capabilities of the firm. Integrates skills, concepts and theories learned in functional areas.

Precludes additional credit for BUSI 3629, BUSI 4609.

Prerequisite(s): fourth-year standing in B.Com.

(International Business Concentration) or B.I.B., and successful completion of all 2000- and 3000-level courses in the Major requirement.

Lectures three hours a week, tutorial one hour a week.

BUSI 4710 [0.5 credit]**International New Ventures**

Challenges facing entrepreneurs in the creation and growth of competitive knowledge-based new international ventures or 'born globals'. Identification of opportunities abroad, strategies and logistics, sourcing, international deal making and business models.

Prerequisite(s): third-year standing, and

BUSI 2702 or BUSI 3703.

Lecture three hours a week.

BUSI 4717 [0.5 credit]**Managing Globalization in Emerging Economies**

Critical examination of the managerial and institutional issues of globalization from the perspectives of emerging economies. Indigenous and international institutions' role in the evolution of a competitive and inclusive global economy and society. Discerning lessons of experience for newly globalizing societies.

Precludes additional credit for BUSI 4902 (no longer offered).

Prerequisite(s): fourth year standing in B.Com, BIB, or Minor in Business, ECON 1001 and ECON 1002 (or ECON 1000).

Lectures three hours a week.

BUSI 4719 [0.5 credit]**Practicum in International Business**

Students will engage in an approved international experience, abroad or within Canada (can include SSCG), that fosters the development of a global mindset. This experience will allow students to integrate and apply the material learned in previous International Business courses.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3701, BUSI 3702.

Prerequisite(s): third-year standing in B.Com. International Business concentration and permission of the Sprott School of Business.

BUSI 4800 [0.5 credit]**Sprott Student Consulting II**

An experiential work environment in which students interact with real clients as a consultant. Various types of projects are possible depending on the company and their goals/needs. Companies may be internal (i.e. Carleton, Sprott), or external (i.e. not for profit, for profit, start-ups, entrepreneurs).

Includes: Experiential Learning Activity

Prerequisite(s): Permission of the Sprott School of Business.

Also offered at the graduate level, with different requirements, as BUSI 5997, for which additional credit is precluded.

Significant industry/project/service consultancy exposure.

BUSI 4810 [0.5 credit]**Practicum in Business Creation**

Students apply concepts and engage in groups to implement the design of an entrepreneurship project per their business plan developed in BUSI 3820. The projects provide opportunities for experiential learning.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3820.

Lectures three hours per week.

BUSI 4901 [0.5 credit]**Topics in Business I**

A selected topics course may be offered. Topics may vary. Consult the School's website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.

Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.

Lecture three hours a week.

BUSI 4902 [0.5 credit]**Topics in Business II**

A selected topics course may be offered. Topics may vary. Consult the School's website for available topics and prerequisite information. Eligibility for this course to serve as an option for specific concentrations is to be established by the School.

Prerequisite(s): Vary based on section. Please refer to sprott.carleton.ca/registration for section specific prerequisites.

Lecture three hours a week.

BUSI 4904 [1.0 credit]**Directed Studies I**

Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4905 [0.5 credit]**Directed Studies II**

Reading course on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4906 [1.0 credit]**Research Project for Business**

Provides students with opportunity to conduct research in their area of interest and present the research in an undergraduate thesis format. Conducted under the supervision of a faculty advisor from Sprott, with the specific deliverable determined by Supervisor and student, and approved by Sprott School.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Com. or B.I.B. and permission of the School of Business.

BUSI 4995 [0.0 credit]**Employability Passport IV**

An advanced course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3995.

Participation in employability events and initiatives throughout the year.

BUSI 4996 [0.0 credit]**Employability Passport BIB IV**

An advanced course in the knowledge and tools required for a career in Business.

Includes: Experiential Learning Activity

Prerequisite(s): BUSI 3700.

Participation in employability events and initiatives throughout the year.

BUSI 4997 [0.0 credit]**Employability Passport BIB IV**

An advanced course in the knowledge and tools required for a career in Business.

Prerequisite(s): BUSI 3996 and BUSI 3997.

Canadian Studies (CDNS)

Canadian Studies (CDNS) Courses**CDNS 1001 [0.5 credit]****Introduction to the Study of Canada**

Introduction to interdisciplinary Canadian Studies. Topics may include: Canadian, Québécois and Indigenous lenses; colonialism, migration, settlement; gender, racialization and sexuality; social movements; place, space, and nation; and political economy and culture. May include field trips.

Precludes additional credit for CDNS 1000 (no longer offered).

Lectures/groups three hours a week.

CDNS 1101 [0.5 credit]**Power, Places and Stories in/of Odawang/Ottawa**

Exploration of Odawang/Ottawa as a settler-colonial border city built on unceded Algonquin territory and tensions between the national, global and local in Odawang/Ottawa. May include field trips.

Lecture/groups three hours a week.

CDNS 2000 [0.5 credit]**Debating Canada**

Exploration of debates about Canada. Topics may include: Indigenous dispossession, genocide, capitalism, resource extraction; racism; patriarchal oppression; inequality; multiculturalism; and the politics of location, language and memory.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2001 [0.5 credit]**Canada and Global Issues**

Examination of the role of the Canadian state and other actors in addressing global issues. Topics may include: human rights; refugees and migrant workers; peacekeeping; climate change; humanitarian assistance; Indigenous rights; and global health.

Precludes additional credit for CDNS 1102 (no longer offered).

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2002 [0.5 credit]**Language, Culture, and Power**

Study of the relationship between language and power, politics, identity and culture in Canada. Consideration is given to: language policies; non-official and official language minorities; and factors of region, class and social mobility.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2210 [0.5 credit]**Introduction to the Study of Culture in Canada**

Examination of key cultural myths, diverse genres, spaces, institutions, practices and critical approaches in Canada.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2300 [0.5 credit]**Nationalism and Multiculturalism in Canada**

Examination of nationalism, colonialism, racialization, ethnicity, multiculturalism and questions of belonging, citizenship and inequality in contemporary and historical Canada.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2301 [0.5 credit]**Immigrants, Migrants and Diasporas**

Study of historical and contemporary Canadian immigration and emigration issues. Topics may include: dynamics of diasporic communities in Canada and Québec; Canadians abroad; and issues of citizenship and belonging.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2302 [0.5 credit]**Land, Water, Capitalism**

Examination of politics and economics of land, water, and power. Topics may include: the study of labour, migrant workers, capitalist extraction; environmental racism and health; and Indigenous dispossession and resistance.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2400 [0.5 credit]**Heritage Places and Practices in Canada**

An examination of heritage as the built environment, cultural landscapes, and intangible heritage. Topics may include: decolonizing memory, identity and place; heritage histories, policies, values and stakeholders; emerging issues such as climate change, mass tourism and urban development.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

CDNS 2510 [0.5 credit]
Memory & History in QC

Pivotal moments, important debates and crises, cultural institutions and practices, the politics of history and memory, and contemporary issues in Québec. Precludes additional credit for CDNS 2511, FINS 2510 (no longer offered), FINS 2511 (no longer offered). Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Lectures/groups three hours per week.

CDNS 3000 [0.5 credit]
Situating Research in Indigenous Studies and Canadian Studies

An examination of the underlying research design and methods of selected works for Indigenous Studies and for Canadian Studies in order to reflect on the political, ethical and intellectual consequences, possibilities and limitations of a variety of disciplinary and interdisciplinary research practices. Includes: Experiential Learning Activity Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3020 [0.5 credit]
Practicing Research in Indigenous Studies and Canadian Studies

Experiential engagement with disciplinary, interdisciplinary and creative research theory and practice. Approaches may include: mixed methods; autoethnography; research-creation; collaboration; and community-based research. Includes: Experiential Learning Activity Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3400 [0.5 credit]
Feminist and Queer Canadas

An examination of the dynamics of feminist and queer social movements and activism. Topics may include: challenges to the regulation of bodies and sexualities; the normalization of patriarchal violence and inequality; access and recognition; and intersectionality. Precludes additional credit for WGST 3400 (no longer offered). Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3550 [0.5 credit]
Diversity in Québec and Francophone Canada

The study of the historical, cultural, social, and political diversity of French-speaking Canada. Topics may include: Francophone diasporic communities; multiculturalism, interculturalism; (settler) colonialism; and the politics of culture and language. Precludes additional credit for CDNS 2500, FINS 3550 (no longer offered). Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3560 [0.5 credit]
Black Studies in Canada

Theories and methods of Black Studies in Canada. Topics may include: the examination of regional, national, transnational histories; structures of anti-Blackness; racial capitalism; and identities, experiences and cultures of Black Canada. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3570 [0.5 credit]
Racialization and Resistance

Deconstructing the category of 'race' and understanding the experiences and impacts of racialization and systemic racism in Canada and Québec. Topics may include: inequality, exploitation, poverty, profiling, incarceration; cultures of resistance; decolonizing anti-racist movements; and anti-racism as critique and affirmation. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3620 [0.5 credit]
Canada-US Relations

An examination the Canada-US relationship, including contemporary policy issues that define that relationship. Topics covered may include: the economy; culture; defence; foreign policy; diplomacy; transnational struggles; and borderlands and the context of Turtle Island. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3700 [0.5 credit]
Constructing and Contesting Memory in Canada

An exploration of conflicts about memory and commemoration in Canada, including: monuments and heritage sites; cultural heritage and artistic expressions; the media; education; language and cultural revitalization; and the politics of memory and forgetting. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 3901 [0.5 credit]
Selected Topics in Canadian Studies

Study of a specific topic or area related to Canadian Studies. Topics vary from year to year. Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 4011 [0.5 credit]
Activism in Odawang/Ottawa

Examination of struggles and activism in and about Ottawa/Odawang. Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies. Seminar three hours a week.

CDNS 4012 [0.5 credit]**Settler Colonialism on Turtle Island**

Exploration of the theories, practices, and history of settler colonialism on Turtle Island. Topics may include: racialization; settlement and migration; white supremacy; heteropatriarchy; land and Indigenous relations; and contemporary struggles and decolonization.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4020 [0.5 credit]**Injury, Memory, and Redress in Canada**

Examination of the politics of redress and (re)conciliation in Canada. Topics include the ways in which historic wrongs, trauma and injury are (re)imagined and memorialized.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4400 [0.5 credit]**Space, Landscape and Identity in Canada**

Explorations of cultural landscapes and competing constructions of space. Topics may include: settler-colonial space-making; whiteness and space; diasporic space; geographies of gender and sexuality; and different understandings of nature/culture.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4403 [0.5 credit]**Heritage Conservation and Sustainability in Canada**

Theory, principles, practices and policy of heritage conservation in Canada and globally. Focus on heritage conservation and its connections with environmental, social, and economic sustainability.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Also offered at the graduate level, with different requirements, as CDNS 5403, for which additional credit is precluded.

Seminar three hours a week.

CDNS 4500 [0.5 credit]**Global Canada**

Examining Canada's place and activities on the global stage. Topics may include: Canadian multinationals; Canadian foreign policy, cultural diplomacy, and corporate globalization; advocacy for Indigenous, environmental, women's, refugees' and children's rights; racial capitalism and im/migration; security; and resistances to the global. Precludes additional credit for CDNS 3301 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4510 [0.5 credit]**Special Topics in Québec Studies**

Examination of a specific topic or area related to the study of Québec. Topics vary from year to year.

Precludes additional credit for CDNS 3510 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4800 [1.0 credit]**Internship Practicum**

Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.

Includes: Experiential Learning Activity

Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.

Prerequisite(s): permission of the School and fourth-year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4801 [0.5 credit]**Internship/Practicum**

Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.

Includes: Experiential Learning Activity

Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.

Prerequisite(s): permission of the School and fourth-year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4802 [0.5 credit]**Internship/Practicum**

Practicum placements are available in institutional settings, primarily in the Ottawa area. Students must meet regularly with the academic evaluator and submit a final written report. A maximum of 1.0 practicum credits may be taken in fulfillment of Canadian Studies requirements.

Includes: Experiential Learning Activity

Precludes additional credit for CDNS 3800, CDNS 3801, CDNS 3802 and CDNS 3803.

Prerequisite(s): permission of the School and fourth year Honours standing in an Indigenous and Canadian Studies program.

CDNS 4901 [0.5 credit]**Selected Topics in Canadian Studies**

Study of a specific topic or area related to Canadian Studies. Topics vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

CDNS 4902 [0.5 credit]**Selected Topics in Canadian Studies**

Study of a specific topic or area related to Canadian Studies. Topics vary from year to year.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4903 [0.5 credit]**Études dirigées I**

Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4904 [0.5 credit]**Études dirigées II**

Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (Mention : Français). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4905 [0.5 credit]**Directed Studies I**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4906 [0.5 credit]**Directed Studies II**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

CDNS 4907 [1.0 credit]**Directed Studies III**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Centre for Initiatives in Education (CIED)

Centre for Initiatives in Education (CIED) Courses

CIED 0999 [0.0 credit]**Academic Prep****CIED 1001 [0.5 credit]****Selected Topics in Academic Discourse**

Selected topics in academic discourse. Topics vary from year to year, and/or section to section, as determined by the Centre for Initiatives in Education.

Lecture three hours a week.

CIED 1200 [0.5 credit]**Special Topics Seminar**

The development of academic writing, reading, research and analytical skills through the examination of selected topics in the instructor's field of expertise.

Prerequisite(s): restricted to returning students in the Enriched Support Program/Indigenous Enriched Support Program.

Seminar three hours a week.

CIED 2100 [1.0 credit]**Academic Discourse: Theory and Practice**

Inquiry into the theoretical nature of academic language, with emphasis on the social nature of academic writing. Incorporates practical strategies for understanding and enhancing growth in writing.

Prerequisite(s): restricted to returning students in the Enriched Support Program.

Seminar three hours a week.

Chemistry (CHEM)

Chemistry (CHEM) Courses**CHEM 0999 [0.0 credit]****Chemistry Matters****CHEM 1001 [0.5 credit]****General Chemistry I**

This maths-intensive course covers introduction to periodicity, gas laws, equilibrium, bonding, electrochemistry, and organic chemistry. This is a specialist course for students intending to take second year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1005, CHEM 1101.

Prerequisite(s): Ontario 4U/M in Chemistry or equivalent. Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1002 [0.5 credit]**General Chemistry II**

This maths-intensive course covers an introduction to solution chemistry, acids and bases, thermodynamics, and kinetics. Specialist course for students intending to take second year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1006.

Prerequisite(s): CHEM 1005 with a minimum grade of B-, or CHEM 1001.

Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1003 [0.5 credit]**The Chemistry of Food, Health and Drugs**

Aspects of chemistry relating to food, food additives, drugs (illicit and beneficial) and their relation to metabolism and health. Topics may include: proteins, carbohydrates, fats, vitamins, cofactors, enzymes, steroids, electrolyte and pH balance, trace elements. Available only as a free option for Science students.

Prerequisite(s): a course in Chemistry (e.g. Ontario Grade 11).

Lectures three hours a week.

CHEM 1004 [0.5 credit]**Drugs and the Human Body**

No science background required. Topics include drug origins, laws, metabolism and dependence, pharmaceutical industry, over the counter medications, placebo effect, antibiotics, pain killers, stimulants, alcohol, marijuana, hallucinogens, birth control and steroids. Students in Science programs may use this course only as a free elective.

Lectures three hours a week.

CHEM 1005 [0.5 credit]**Elementary Chemistry I**

Introduction to stoichiometry, periodicity, gas laws, equilibrium, bonding, and organic chemistry with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1001 or who are not intending to take upper year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, CHEM 1101.

Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1006 [0.5 credit]**Elementary Chemistry II**

Introduction to solution chemistry, acids and bases, thermodynamics, and kinetics, with emphasis on examples of relevance to the life sciences. For students who lack the prerequisite for CHEM 1002 or who are not intending to take upper year chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1002.

Prerequisite(s): CHEM 1001 or CHEM 1005.

Lectures and tutorial four hours a week, laboratory three hours every other week.

CHEM 1007 [0.5 credit]**Chemistry of Art and Artifacts**

The chemistry of arts and artifacts created throughout the ages (Paleolithic, Neolithic, Bronze, Iron, Middle and Modern) will be examined. Basic chemical principles will be explored and reviewed when required. Students in Science programs may use this course only as a free elective.

Lectures three hours a week.

CHEM 1101 [0.5 credit]**Chemistry for Engineering Students**

Topics include stoichiometry, atomic and molecular structure, thermodynamics and chemical equilibrium, acid-base chemistry, carbon dioxide in water, alkalinity, precipitation, electrochemistry, kinetics and basic organic chemistry. Laboratory component emphasizes techniques and methods of basic experimental chemistry.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 1000 (no longer offered), CHEM 1001, and CHEM 1005.

Prerequisite(s): Ontario 4U/M in Chemistry or equivalent.

Lectures three hours a week, laboratory three hours every other week.

CHEM 2103 [0.5 credit]**Physical Chemistry I**

Basic principles of thermodynamics. Development of the laws of thermodynamics, enthalpy, entropy and free energy, and their applications to phase equilibria, electrochemistry, and kinetics. Brief introduction to quantum mechanics.

Includes: Experiential Learning Activity

Precludes additional credit for BIOC 2300, CHEM 2101 (no longer offered) and CHEM 2102 (no longer offered).

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002, MATH 1004, MATH 1107, PHYS 1007 and PHYS 1008 or PHYS 1003 and PHYS 1004.

Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 2203 [0.5 credit]**Organic Chemistry I**

Structure, organization, and scope of organic chemistry including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification. Training in the handling and purification of organic compounds, organic chemical reactions, and the use of infrared spectroscopy.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 2207.

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.

Lectures three hours a week and laboratory three hours a week.

CHEM 2204 [0.5 credit]**Organic Chemistry II**

Further discussion of chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of the chemical reactions of organic functional groups. Laboratory experience in organic chemical reactions, use of infrared spectroscopy and other techniques to determine the structure of unknown organic compounds.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 2208 and CHEM 2206.

Prerequisite(s): CHEM 2203.

Lectures three hours a week and laboratory three hours a week.

CHEM 2207 [0.5 credit]**Introduction to Organic Chemistry I**

Structure, organization, and scope of organic chemistry, including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification.

Precludes additional credit for CHEM 2203.

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.

Lectures three hours a week.

CHEM 2208 [0.5 credit]**Introduction to Organic Chemistry II**

Further discussion of the chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of chemical reactions of the organic functional groups.

Precludes additional credit for CHEM 2204 and CHEM 2206.

Prerequisite(s): CHEM 2207 or CHEM 2203.

Lectures three hours a week.

CHEM 2302 [0.5 credit]**Analytical Chemistry I**

Introduction to quality assurance measures, calibration strategies and the fundamentals of solution-based analytical measurement processes. Qualitative and quantitative analysis using potentiometric and electrolysis techniques including ion selective electrodes, coulometry, amperometry and voltammetry. Redox, acid/base and EDTA titrations in the context of various buffer systems.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 2300.

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002 or CHEM 1101 and (MATH 1007 or MATH 1004).

Lectures three hours a week, laboratory three hours a week.

CHEM 2303 [0.5 credit]**Analytical Chemistry II**

Spectrophotometric analysis using Uv-Vis, fluorescence and FTIR instrumentation. Modern separation methods including CE, GC and LC. Recent techniques and applications using mass spectrometry. Applications of all of the above to real-world analysis including the advancement of environmental, biochemistry and health-related research.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 2300 and CHEM 2301.

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002, or CHEM 1101, and (MATH 1007 or MATH 1004).

Lectures three hours a week, laboratory three hours a week.

CHEM 2400 [0.5 credit]**Independent Research I**

Students carry out a laboratory research project under the supervision of a faculty member from the Department of Chemistry. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to Honours students having second-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.

Laboratory research for at least three hours a week over two terms.

CHEM 2501 [0.5 credit]**Introduction to Inorganic and Bioinorganic Chemistry**

The basic concepts of inorganic chemistry, including the origins of elemental properties, simple theories of bonding, intermolecular forces, main group and transition metal chemistry, coordination chemistry. Inorganic ions in biochemistry, including ion transport and storage, oxygen carriers and hydrolases, redox proteins.

Precludes additional credit for CHEM 3506.

Prerequisite(s): CHEM 1006 with a minimum grade of B-, or CHEM 1002.

Lectures three hours a week, tutorial one hour a week.

CHEM 2800 [0.5 credit]**Foundations for Environmental Chemistry**

A basis of chemistry needed to understand the environment: composition of the atmosphere and natural waters; equilibrium; surface properties; kinetics and spectroscopy; physical and chemical properties of chemicals in the environment. Limited enrolment course. Priority is given to students in Environmental Science/ Engineering.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 1006 with a minimum grade of B- or CHEM 1002, or CHEM 1101, (MATH 1007 or MATH 1004).

Lectures three hours a week, laboratory three hours a week.

CHEM 3100 [0.5 credit]**Physical Chemistry II**

Further development of thermodynamic equations and their applications to mass changes, chemical potential, chemical equilibria, transport properties and advanced phase equilibria. Use of partial differentials and development of Maxwell's relations will also be covered.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 2102.

Prerequisite(s): CHEM 2103 or BIOC 2300, and MATH 1005 or MATH 2007.

Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 3101 [0.5 credit]**Quantum Chemistry**

Classical equations of motion, harmonic oscillator, diatomic and polyatomic molecules, molecular mechanics, quantum mechanics, Schrödinger equation and wave functions, vibrational spectra, hydrogen atom, quantum numbers, electronic spectra, bonding in small molecules.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 2103, MATH 2007 and MATH 2008.

Lectures three hours a week, tutorial one hour per week.

CHEM 3102 [0.5 credit]**Methods of Computational Chemistry**

Molecular orbital theory of organic and inorganic chemistry. Applications of computational chemistry to chemical bonding, aromaticity, molecular spectra. Semi-empirical and ab initio electronic structure theory. Comparison of theoretical methods used to obtain molecular properties. Introduction to statistical thermodynamics.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 3101 or PHYS 3701.

Lectures and problems three hours a week.

CHEM 3106 [0.5 credit]**Computational Chemistry Methods Laboratory**

Industry-standard quantum chemistry software is used for Hartree-Fock, density functional, and post Hartree-Fock correlation calculations. Results are applied to problems in molecular structure, thermodynamics, vibrational spectroscopy, and kinetics. The UNIX operating system, Bourne-shell programming, and Python scripting are also introduced.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 3102 (may be taken concurrently).

Laboratory three hours a week.

CHEM 3107 [0.5 credit]**Experimental Methods in Nanoscience**

Thin film production and characterization, scanning electron microscopy, synthesis of metal nanoparticles and particle size determination, computational modeling of nanostructures.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 3100.

Laboratory four hours a week.

CHEM 3201 [0.5 credit]**Advanced Organic Chemistry I**

Instrumental methods for determining organic structures. Selected organic reactions with emphasis on mechanisms and reactive intermediates.

Prerequisite(s): CHEM 2204 or CHEM 2206 or CHEM 2208.

Lectures three hours a week, tutorial one and a half hours per week.

CHEM 3202 [0.5 credit]**Advanced Organic Chemistry II**

Continued mechanistic survey of additional organic reactions with emphasis on synthetic usefulness and stereochemistry. Interspersed with selected topics such as instrumental methods, photochemistry, literature of organic chemistry, natural and synthetic polymers, heterocycles, terpenes and alkaloids.

Prerequisite(s): CHEM 3201 or equivalent.

Lectures three hours a week, tutorial one and a half hours per week.

CHEM 3205 [0.5 credit]**Experimental Organic Chemistry**

A laboratory-based course including advanced concepts and techniques in organic synthesis, structure determination, and the rates and mechanisms of reactions. Students are responsible for literature surveys, acquisition of theoretical background, and design of experimental procedures.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 2204 or CHEM 2206 and CHEM 3201.

Laboratory four hours a week.

CHEM 3305 [0.5 credit]**Advanced Analytical Chemistry Laboratory**

Advanced instrumentally based techniques of analysis. Emphasis on identification and quantitation of low-level contaminants in environmental matrices using chromatographic and spectroscopic methods, including sampling, cleanup, measurement and reporting of results.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 2302 or CHEM 2303.

Laboratory four hours a week.

CHEM 3400 [0.5 credit]**Independent Research II**

Students carry out a laboratory research project supervised by a Chemistry faculty member. A research report must be submitted by the last day of classes for evaluation by the Chair and Faculty supervisor; expectations of student performance and evaluation exceed that of CHEM 2400.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to Honours students having third-year standing in a Chemistry program with an overall CGPA of 10.0 or higher, and approval of the Chair and a Faculty supervisor.

Laboratory research for at least three hours a week over two terms.

CHEM 3401 [0.5 credit]**Physical Aspects of Biochemistry**

Chemistry, structure and function of nucleic acids, proteins, carbohydrates, and lipids. Thermodynamics of biological systems, chemical mechanisms and organic transformations. Intended for Chemistry Majors.

Precludes additional credit for BIOC 2200, BIOL 2200, and BIOC 3101.

Prerequisite(s): CHEM 2103 and CHEM 2204.

Lectures three hours a week.

CHEM 3503 [0.5 credit]**Inorganic Chemistry I**

Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 3507.

Prerequisite(s): CHEM 2501.

Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3504 [0.5 credit]**Inorganic Chemistry II**

Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis. Laboratory will introduce the student to a range of synthetic techniques and physical methods of characterization.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 3508.

Prerequisite(s): CHEM 3503.

Lectures three hours a week, tutorial one hour a week and laboratory four hours a week.

CHEM 3507 [0.5 credit]**General Inorganic Chemistry I**

Symmetry, identification of Raman and infrared active vibrations, symmetry-adapted molecular orbital theory of polyatomic molecules, electron deficient bonding, bonding in coordination complexes, solid state bonding, ionic lattices.

Precludes additional credit for CHEM 3503.

Prerequisite(s): CHEM 2501.

Lectures three hours a week, tutorial one hour a week.

CHEM 3508 [0.5 credit]**General Inorganic Chemistry II**

Physical properties of coordination complexes, ligand substitutions and electron transfer reaction mechanisms, organometallic chemistry: bonding, nomenclature and catalysis.

Precludes additional credit for CHEM 3504.

Prerequisite(s): CHEM 3503 or CHEM 3507.

Lectures three hours a week, tutorial one hour a week.

CHEM 3600 [0.5 credit]**Introduction to Nanotechnology**

Nanoscale units, bulk vs. nanoproperties, electrons, atoms and ions, metals, band structure, electrical conduction, biosystems, molecular devices, quantum mechanics and optics, tools for measuring nanostructures. Production of nanostructures: self assembly, nanoscale crystal growth, polymerization. Applications to sensors, magnets, electronics, drug delivery. Toxicology of nanostructures.

Prerequisite(s): CHEM 3100.

Lectures three hours a week.

CHEM 3700 [0.5 credit]**Industrial Applications of Chemistry**

Uses of chemistry in a number of industries: fertilizers, electrochemical, metallurgical, petrochemical, pulp and paper, plastics, pharmaceutical. Interaction of chemistry with economic, political, engineering, environmental, health, legal considerations. Guest lecturers.

Prerequisite(s): (BIOC 2300 or CHEM 2103) and one of CHEM 2207 or CHEM 2203.

Lecture three hours a week.

CHEM 3800 [0.5 credit]**The Chemistry of Environmental Pollutants**

Inorganic and organic environmental pollutants: their toxicology, production, use pattern and known effects on the environment. Aspects of risk and regulation. Chemistry involved in water and sewage treatment.

Prerequisite(s): CHEM 2207 or CHEM 2203 or CHEM 2800.

Lectures three hours a week.

CHEM 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

CHEM 4100 [0.5 credit]**Advanced Topics in Physical Chemistry I**

Principles of Group Theory as applied to Chemistry. Point groups, character tables, symmetry orbitals, molecular orbitals, aromaticity, allowed and forbidden reactions, sandwich complexes. Selection rules in spectroscopy, molecular vibrations.

Prerequisite(s): CHEM 3102.

CHEM 4102 [0.5 credit]**Advanced Topics in Physical Chemistry II**

Statistical thermodynamics, energy states, equilibrium, partition functions for diatomic molecules. Chemical kinetics: rate laws, solution of differential equations, transition state theory, bimolecular reactions in gases and in solution, chain reactions, catalysis, atmospheric chemical reactions and photochemistry.

Prerequisite(s): CHEM 3102.

Lectures and seminars three hours a week.

CHEM 4103 [0.5 credit]**Surface Chemistry and Nanostructures**

Surface structure, thermodynamics and kinetics, specifically regarding adsorption/desorption and high vacuum models. Nanoscale structures and their formation, reactivity and characterization. Thin films, carbon nanotubes, self-assembled monolayers and supramolecular aggregates.

Prerequisite(s): CHEM 3600 and CHEM 3107.

Also offered at the graduate level, with different requirements, as CHEM 5108, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4104 [0.5 credit]**Physical Methods of Nanotechnology**

An overview of methods used in nanotechnology. Principles of scanning probe techniques ranging from surface physics to biology. State of the art methods to create nanostructures for future applications in areas such as nanolithography, nanoelectronics, nano-optics, data storage and bio-analytical nanosystems.

Prerequisite(s): CHEM 3600 and CHEM 3107.

Lectures three hours a week.

CHEM 4201 [0.5 credit]**Macromolecular Nanotechnology**

Biological and synthetic macromolecules related to nanoscale phenomena. Challenges and opportunities associated with natural and synthetic polymers on the nanoscale. Molecular recognition, self-assembled nanostructures, scaffolds and templates, functional nanomaterials, amphiphilic architectures, nanocomposites, and nanomachines. Applications to sensing, biomaterials, drug delivery, and polymer based devices.

Prerequisite(s): CHEM 3600 or permission of the department.

Also offered at the graduate level, with different requirements, as CHEM 5207, CHEM 5208, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4202 [0.5 credit]**Advanced Topics in Organic Chemistry I**

Topics include 2-dimensional ¹H and ¹³C NMR spectroscopy and structure determination of complex organic molecules.

Prerequisite(s): CHEM 3201.

Also offered at the graduate level, with different requirements, as CHEM 5407, for which additional credit is precluded.

CHEM 4203 [0.5 credit]**Synthetic Organic Chemistry**

The application of reactions to the synthesis of organic molecules. Emphasis on design of synthetic sequences, new reagents, and stereoselectivity. Topics include advanced methods for synthesis and reactions of alkenes, carbonyls, and enolates, functional group interconversion, oxidation and reduction, protecting groups, rearrangements, and metal-catalyzed cross-coupling.

Prerequisite(s): CHEM 3201 and CHEM 3202.

Lectures and seminars three hours a week.

CHEM 4204 [0.5 credit]**Organic Polymer Chemistry**

Introduction to basic principles of polymer chemistry, industrial and synthetic polymers, different types of polymerization and polymer characterization. Study of commodity plastics, engineering thermoplastics, and specialty polymers, with emphasis on their synthesis. Prerequisite(s): CHEM 3201 or equivalent.

Also offered at the graduate level, with different requirements, as CHEM 5406, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4205 [0.5 credit]**Reactivity and Mechanism in Organic Chemistry**

The application of frontier molecular orbital theory (HOMO-LUMO interactions) to organic reactions, including thermal and photochemical cycloadditions of pi-systems (including 1,3-dipoles) and rearrangements. Reactions of radicals and carbenes; conformational analysis, stereochemical effects, and methods for the determination of reaction mechanisms.

Prerequisite(s): CHEM 3202 and CHEM 3503 (may be taken concurrently).

Lectures and seminars three hours a week.

CHEM 4206 [0.5 credit]**Natural Products Chemistry**

A survey of the major classes of natural products with respect to their structural elucidation, synthesis, biosynthesis and bioactivity, with emphasis on compounds that have medicinal importance.

Prerequisite(s): CHEM 3201 and CHEM 3202.

Lectures and seminars three hours a week.

CHEM 4301 [0.5 credit]**Advanced Topics in Analytical Chemistry I**

Analytical chemistry of trace and ultratrace elements/compounds. Special requirements for quantitative determination by various instrumental methods. Control of contamination and blanks. Analytical method development to improve selectivity, sensitivity and detection limit. Strength and limitations of each instrument. Optimization of all operating parameters.

Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303.

Also offered at the graduate level, with different requirements, as CHEM 5607, for which additional credit is precluded.

Lectures and seminars three hours a week.

CHEM 4302 [0.5 credit]**Advanced Topics in Analytical Chemistry II**

Solutions and separations in analytical chemistry. Stability of aqueous solutions of standards and samples. Complex formation, multi-step and competing equilibria and their application to the design of selective methods of separation and determination. Electroanalytical techniques. Electroanalytical chemistry of aqueous solutions. Phase equilibria and solvent extraction.

Prerequisite(s): CHEM 2103 and one of CHEM 2302 or CHEM 2303.

Lectures and seminars three hours a week.

CHEM 4304 [0.5 credit]**Advanced Applications In Mass Spectrometry**

Detailed breakdown of the physical, electrical and chemical operation of mass spectrometers. Applications in MS ranging from the analysis of small molecules to large biological macromolecules. Descriptions of the use of mass spectrometry in industry as well as commercial opportunities in the field.

Prerequisite(s): CHEM 2103 or BIOC 2300, and one of CHEM 2302 or CHEM 2303.

Also offered at the graduate level, with different requirements, as CHEM 5109, for which additional credit is precluded.

Lectures and seminars three hours a week.

CHEM 4305 [0.5 credit]**Environmental Chemistry and Toxicology**

Overview of environmental chemistry and toxicology principles including chemical sources, fate, and effects in the environment. Examining organic reactions occurring in abiotic environments and biological systems, and studying aspects of toxicant disposition and biotransformation. Emphasis on contemporary problems in human health and the environment.

Prerequisite(s): CHEM 2203 or CHEM 2207, and CHEM 2800 or CHEM 2103, or BIOC 3101 or permission of the department.

Also offered at the graduate level, with different requirements, as CHEM 5606, for which additional credit is precluded.

Lectures three hours a week.

CHEM 4406 [0.5 credit]**Pharmaceutical Drug Design**

Important elements of rational drug design. Ligand-receptor interactions, structure-activity relationships, molecular modeling of pharmacophores, structure and mechanism-based approaches to drug design. Enzyme inhibition in chemotherapy and design of anti-viral drugs. Includes: Experiential Learning Activity

Prerequisite(s): CHEM 2103 and (CHEM 2203 or CHEM 2207), BIOC 3101 and (BIOC 3102 or BIOC 3008).

Lectures and laboratory five hours a week.

CHEM 4407 [0.5 credit]**Polymer Modeling**

Polymer architectures; Flexible and rigid rod polymers; Rotational isomeric states (RIS); Molecular mechanics, Ramachandran Map, Helix parameters; internal and external parameters; regular and random coil structures; molecular dynamics; calculation of end-to-end distance, NMR chemical shifts; conformational entropy and properties.

Prerequisite(s): MATH 1107 and CHEM 2204 or permission of the department.

Lectures three hours per week.

CHEM 4502 [0.5 credit]**Radiochemistry**

A study of nuclear stability and decay; chemical studies of nuclear phenomena. Applications of radioactivity.

Prerequisite(s): CHEM 2302, CHEM 2303, and CHEM 3100, or permission of the Department.

Also offered at the graduate level, with different requirements, as CHEM 5905, for which additional credit is precluded.

Lectures and seminars three hours a week.

CHEM 4503 [0.5 credit]**Advanced Topics in Inorganic Chemistry I**

A quantitative basis for ligand field theory; unreal and real wavefunctions of d-orbitals; derivation of the energies of d-orbitals using variational principle, secular determinants, and ligand field operators; the effect of ligand field on free ion term symbols, wavefunction descriptions of terms symbols; applications.

Prerequisite(s): CHEM 3504 and CHEM 3101.

Lectures three hours a week.

CHEM 4504 [0.5 credit]**Advanced Topics in Inorganic Chemistry II**

Reactivity of inorganic coordination compounds. Thermodynamic and kinetic factors affecting reactivity. Industrial and biochemical processes catalyzed by metal coordination compounds. Experimental methodologies, data analysis and rate law evaluation used to obtain reaction mechanisms leading to improved methods of catalysis.

Prerequisite(s): CHEM 3504 or equivalent.

Lectures three hours a week.

CHEM 4505 [0.5 credit]**Application of Physical Methods to Electron Transfer Chemistry**

Spectroscopic techniques (i.e. UV-visible NIR, IR, EPR) and electrochemistry methods that are used to study photochemical and thermal intermolecular and intramolecular electron transfer in transition metal complexes are presented. Electron transfer theory and redox-active (non-innocent) ligands are discussed.

Prerequisite(s): CHEM 3504.

Lectures three hours a week.

CHEM 4700 [0.5 credit]**Special Topics in Chemistry**

A topic of current interest in any branch of chemistry. Only one special topics course may be presented for credit.

Prerequisite(s): permission of the Department.

CHEM 4800 [0.5 credit]**Atmospheric Chemistry**

Properties of natural atmospheric constituents; biogeochemical cycles involving gases; chemical reactions in the atmosphere; anthropogenic atmospheric pollutants (e.g., chlorofluorocarbons, sulphur and nitrogen oxides, photochemical smog sources and effects on the biosphere. Relation between the structure of molecules and their spectral and reactive properties.

Prerequisite(s): CHEM 2103 or CHEM 2800.

Lectures three hours a week.

CHEM 4907 [1.0 credit]**Honours Essay and Research Proposal**

Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and oral poster presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 4908, FOOD 4907 and FOOD 4908.

Prerequisite(s): fourth year standing in an Honours Chemistry program and permission of the department.

CHEM 4908 [1.0 credit]**Research Project and Seminar**

Senior students in Honours Chemistry carry out a research project under the direction of one of the members of the Department. A written report and an oral presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for CHEM 4907, FOOD 4907 and FOOD 4908.

Prerequisite(s): any two of CHEM 3106, CHEM 3107, CHEM 3205, CHEM 3305 and CHEM 3504 and permission of the department.

Laboratory and associated work equivalent to at least eight hours a week for two terms.

Childhood and Youth Studies (CHST)

Childhood and Youth Studies (CHST) Courses

CHST 1003 [1.0 credit]**Introduction to Childhood and Youth Studies**

An introduction to multiple approaches to studying childhood and youth through a diverse range of historical periods and cultural contexts. Students will apply an interdisciplinary lens to explore the ways that children and youth have been discussed, researched, and understood. Precludes additional credit for CHST 1000 (no longer offered), CHST 1002 (no longer offered).

Lecture and discussion groups three hours a week.

CHST 2001 [0.5 credit]**Experiential Learning in Childhood and Youth Studies**

An examination of the philosophies, purposes, methods, techniques, and issues of childhood and youth studies through engagement with children and youth in campus and community settings. Students will make connections to theoretical and curriculum frameworks and current debates and perspectives.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in Childhood and Youth Studies.

Lecture and discussion three hours a week.

CHST 2003 [0.5 credit]**Introduction to Research Methods in Childhood and Youth Studies**

An introduction to the foundations of research involving children and youth. Students will learn research paradigms and strategies for designing and conducting research with children and young people. Ethical considerations and the involvement of children as co-researchers will be emphasized.

Precludes additional credit for CHST 2000 (no longer offered).

Prerequisite(s): second-year standing in Childhood and Youth Studies.

Lectures and discussion groups three hours a week.

CHST 2011 [0.5 credit]**Children's Literature**

Introduction to the critical study of children's literature. Also listed as ENGL 2011.

Precludes additional credit for ENGL 2006 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

CHST 3000 [0.5 credit]**Conceptualizing Adolescence in Childhood and Youth Studies**

A comprehensive interdisciplinary overview of key issues, research, and theoretical developments in the study of childhood and youth. Students will explore the different and often conflicting conceptualizations of adolescence and examine youth theories and their implications.

Prerequisite(s): Third year standing in Childhood and Youth Studies.

Lectures three hours a week.

CHST 3002 [0.5 credit]**Special Topics in Child Studies**

Analysis of selected topics relevant to theory, research, and practice involving children and youth. The choice of topics will vary from year to year. Students should consult with the Institute regarding the topic offered.

Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.

Lectures three hours a week.

CHST 3101 [0.5 credit]**Research Seminar**

This seminar is designed for students who wish to complete an Honours research project in their 4th year. Students will select a topic of study, investigate methodological and ethical considerations, and implement the key steps involved in designing rigorous research projects in diverse settings.

Precludes additional credit for CHST 3100 (no longer offered).

Prerequisite(s): CHST 2003 or CHST 2000 (no longer offered), and third-year standing in Childhood and Youth Studies.

Seminar three hours a week.

CHST 3103 [0.5 credit]**Critical Approaches to Child Development**

A critical examination of philosophical, ideological, and discursive perspectives on childhood and youth. Students will analyze normative constructs reproduced in developmental discourses and research, particularly concerning gender, racism, disability, and oppressive practices.

Precludes additional credit for CHST 3001 (no longer offered).

Prerequisite(s): Third-year standing in Childhood and Youth Studies.

Lecture three hours a week.

CHST 3201 [0.5 credit]**Children's Knowledges, Cultures, and Representations**

An analysis of the ways children construct social relations through cultures and systems of representations. Students will investigate how children's knowledges and identities are constructed through their relationships with the world and develop theoretical and practical approaches for working with children from diverse cultures.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Seminar three hours a week.

CHST 3202 [0.5 credit]**Reconceptualizing Early Childhood Education and Care**

A study of historical, contemporary, global, and local conversations about the professional field of early childhood education and care and its diverse practices and contexts. Topics may include reconciliation, anti-racist pedagogies, asset-based practices, inclusiveness, caring in context, and critical reflection.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Lecture and discussion groups three hours a week.

CHST 3203 [0.5 credit]**Youth Culture and Activism**

An exploration of youth cultures and participation in local, national, and global contexts. Students will examine youth engagement and advocacy, including definitions of citizenship, theories of resistance, the construction of “youth” as a social category, and the impact of technology and social media.

Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 3204 [0.5 credit]**Literary Representations of Childhood and Youth**

An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction).

Also listed as ENGL 3204.

Prerequisite(s): third-year standing, or permission of the department.

Seminar three hours a week.

CHST 3205 [0.5 credit]**Race, Childhood, and Youth**

An examination of historical and contemporary issues, debates, and methodologies pertaining to the studies of race, ethnicities, and racialization in childhood and youth studies. Students will also theorize the intersectionality of race, racism, racialization, racial and ethnic formations, nationalism, and colonialism in a contemporary context.

Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 3302 [0.5 credit]**Children, Policy, and Practice**

An introduction to the concepts of policy and practice and how these are influenced by history, economy, geography, and culture. Topics may include provincial, national, and international economic, social, and educational policies concerning children and youth.

Precludes additional credit for CHST 4000 (no longer offered).

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Lecture three hours a week.

CHST 3303 [0.5 credit]**Children’s Rights**

This course examines children’s rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts.

Also listed as HUMR 3303.

Precludes additional credit for CHST 3901 (no longer offered).

Prerequisite(s): third-year standing in Childhood and Youth Studies.

Lecture three hours a week.

CHST 3304 [0.5 credit]**Disability and Childhood: Transnational Perspectives**

Drawing on theory and research in disabled children’s childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies.

Also listed as DBST 3304.

Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies, or permission of the department.

Lecture three hours a week.

CHST 3305 [0.5 credit]**Childhood and Youth in Indigenous Contexts**

An introduction to indigenous perspectives and contexts, both historical and contemporary, in relation to practice with Indigenous children, youth, families, and communities. Students will explore critical theory and necessary protocols for respectful entry into child and youth care practice within Indigenous contexts.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Childhood and Youth Studies or Indigenous Studies, or permission of the department.

Seminar three hours a week.

CHST 3306 [0.5 credit]**Nature, Childhood and Youth**

In this course, students will learn about the different ways in which human-nature relationships have been conceptualized in the interdisciplinary literature; the evidence base pointing to the power of nature as teacher of foundational life-skills; and current approaches to nature-based learning.

Precludes additional credit for CHST 3002 taken in Fall 2021, Winter or Summer 2022.

Prerequisite(s): Third-year standing in Childhood and Youth Studies, or permission of the department.

Lectures three hours a week.

CHST 3904 [1.0 credit]**Service-Learning in Community Settings**

Students will learn to apply their knowledge pertaining to children and youth to a policy- or practice-oriented work environment. Students will complete a term paper and other assignments documenting gains in experiential knowledge. Graded SAT/UNS.

Includes: Experiential Learning Activity

Prerequisite(s): students with third- or fourth-year standing in Childhood and Youth Studies may apply to the Undergraduate Advisor for permission.

Field placement six hours per week in a community setting, and regular class forum.

CHST 4001 [0.5 credit]**Advanced Topics in Child Studies**

In-depth analysis of theoretical, empirical, and applied topics related to children and youth in Canada and/or internationally. Topics may include poverty and social inequality, child and youth health, social media and social change. This course is repeatable when the topic changes.

Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 4003 [0.5 credit]**History of 'The African Child'**

Students will analyze the history of the figure of 'the African child' using a range of visual, sources from colonial officials, anthropologists, historians, advertisers, charity and development workers, and African children themselves.

Includes: Experiential Learning Activity

Also listed as AFRI 4003.

Precludes additional credit for CHST 4001 if taken in 2014-15.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

CHST 4004 [0.5 credit]**Theories of Inclusion in Childhood and Youth Education**

An examination of the ways that educational discourses construct and perpetuate marginalization of disadvantaged individuals across historical, political, and educational contexts. Students will explore inclusive and exclusive approaches to education and care and how these discursive and material conditions shape the learning experiences of children.

Prerequisite(s): third-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 4101 [0.5 credit]**Children, Youth, and Popular Culture**

A critical examination how popular culture, including consumer culture and digital media, mediates the identities, aspirations, and experiences of children and youth. Students will engage in critical dialogue about media culture and ideology and use cultural production to explore counter-narratives to problematic media representations.

Prerequisite(s): fourth-year standing in Childhood and Youth Studies, or permission of the department.

Seminar three hours a week.

CHST 4102 [0.5 credit]**Queer and Trans Youth**

An examination of the ways that queer and trans youth have been conceptualized in research, media, literature, policy, and education. A range of multimedia sources will be used to explore the ways queer and trans youth are using language to render themselves intelligible.

Prerequisite(s): fourth-year standing in Childhood and Youth Studies or Women's and Gender Studies, or permission of the department.

Seminar three hours a week.

CHST 4900 [0.5 credit]**Independent Study**

A reading or research course for students who wish to investigate a particular topic of interest within Childhood and Youth Studies. Students may not take more than one credit of Independent Study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Childhood and Youth Studies and IIS Co-Director approval.

CHST 4908 [1.0 credit]**Honours Research Project**

Interdisciplinary research project for students in the Honours Research Project stream. Projects will be completed under the supervision of a CHST faculty member. Students must contact the CHST Program Advisor to request approval to register in this course.

Includes: Experiential Learning Activity

Prerequisite(s): CHST 3101, fourth-year standing in Childhood and Youth Studies with a Major CGPA of 10.0 or higher, and permission of the CHST Program Advisor.

Chinese (CHIN)

Chinese (CHIN) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

CHIN 1010 [0.5 credit]**First-Year Mandarin Chinese I**

For students with no knowledge of Mandarin. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language. Compulsory attendance.

Precludes additional credit for CHIN 1110.

Four hours a week.

CHIN 1020 [0.5 credit]**First-Year Mandarin Chinese II**

Continuation of first-year Mandarin Chinese. Oral skills; basic reading and writing skills. Compulsory attendance. Precludes additional credit for CHIN 1110.

Prerequisite(s): grade of C or higher in CHIN 1010, or permission of the School.

Four hours a week.

CHIN 1110 [1.0 credit]**Intensive First-Year Mandarin Chinese**

For students with no knowledge of Mandarin Chinese. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language. Compulsory attendance.

Precludes additional credit for CHIN 1010 and CHIN 1020.

Eight hours a week (one term).

CHIN 2010 [0.5 credit]**Second-Year Mandarin Chinese I**

Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for CHIN 2110.

Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School.

Four hours a week.

CHIN 2020 [0.5 credit]**Second-Year Mandarin Chinese II**

Continuation of second-year Mandarin Chinese. Further study of Mandarin Chinese to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for CHIN 2110.

Prerequisite(s): grade of C or higher in CHIN 2010 or permission of the School.

Four hours a week.

CHIN 2110 [1.0 credit]**Intensive Second-Year Mandarin Chinese**

Further study of Mandarin Chinese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for CHIN 2010 and CHIN 2020.

Prerequisite(s): grade of C or higher in CHIN 1020 or CHIN 1110, or permission of the School.

Eight hours a week (one term).

CHIN 3010 [0.5 credit]**Third-Year Mandarin Chinese I**

Continuation of the study of Mandarin Chinese to reach a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in CHIN 2020, or CHIN 2110, or permission of the School.

Three hours a week.

CHIN 3015 [0.5 credit]**Mandarin Chinese for Heritage Speakers**

For students who have attained Mandarin Chinese proficiency in an informal setting, this course provides an opportunity to build on their existing language skills and to develop them in a formal academic setting. The course will formalize grammar awareness and enhance Mandarin Chinese literacy skills.

Precludes additional credit for 1000 and 2000 level CHIN courses, and also for CHIN 3010.

Prerequisite(s): permission of the School.

Three hours a week.

CHIN 3020 [0.5 credit]**Third-Year Mandarin Chinese II**

Continuation of third-year Mandarin Chinese. Progress toward reaching a more advanced level, including ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in CHIN 3010 or CHIN 3015, or permission of the School.

Three hours a week.

CHIN 4010 [0.5 credit]**Fourth-Year Mandarin Chinese I**

Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Prerequisite(s): grade of C or higher in CHIN 3020, or permission of the School.

Three hours a week.

CHIN 4020 [0.5 credit]**Fourth-Year Mandarin Chinese II**

Continuation of fourth-year Mandarin Chinese. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Prerequisite(s): grade of C or higher in CHIN 4010, or permission of the School.

Three hours a week.

CHIN 4210 [0.5 credit]**Functional Contemporary Mandarin Chinese I**

Further study of Mandarin Chinese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Prerequisite(s): grade of C or higher in CHIN 4020, or permission of the School.

Three hours a week.

CHIN 4220 [0.5 credit]**Functional Contemporary Mandarin Chinese II**

Continuation of CHIN 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Prerequisite(s): grade of C or higher in CHIN 4210 or permission of the School.

Three hours a week.

CHIN 4380 [0.5 credit]**Topics in Chinese Culture and Society**

Selected topics in Chinese culture and society. Repeatable once for credit when topic varies. Taught in English.

Prerequisite(s): Third-year standing in the Minor in Mandarin Chinese, or permission of the instructor.

Three hours a week.

CHIN 4900 [1.0 credit]**Independent Study**

Research in a topic in Mandarin Chinese language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Mandarin Chinese, grade of C or higher in CHIN 4020 or equivalent, and permission of the School.

CHIN 4901 [0.5 credit]**Independent Study**

Research in a topic in Mandarin Chinese language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Mandarin Chinese, grade of C or higher in CHIN 4020 or equivalent, and permission of the School.

Civil Engineering (CIVE)

Civil Engineering (CIVE) Courses**CIVE 2004 [0.5 credit]****GIS, Surveying, CAD and BIM**

Engineering geometry and spatial graphics. Fundamentals of surveys. Digital surveying tools; total station, GPS. Computer-Aided Drafting (CAD). Geographic Information Systems (GIS). Spatial referencing. Building Information Modelling (BIM). Integrated design using digital tools. Field exercises using software to process and evaluate spatial data.

Includes: Experiential Learning Activity

Prerequisite(s): Second-year status in Engineering or (GEOM 1004 for students in BSc in Geomatics).

Lectures three hours a week, problem analysis and laboratories three hours a week.

CIVE 2005 [0.5 credit]**Architectural Technology 2**

Technical issues involved in architectural design of buildings from ancient times to the present.

Technological innovation and materials related to structural developments, and the organization and design of structures. Basic concepts of calculus, equilibrium, and mechanics of materials.

Precludes additional credit for Not eligible for use for Bachelor of Engineering degree requirements.

Prerequisite(s): ARCC 2202.

Lectures three hours a week, laboratory three hours a week.

CIVE 2101 [0.5 credit]**Engineering Mechanics**

Virtual work. Friction. Relative motion of particles.

Kinematics of a rigid body: translation, rotation; general plane motion; absolute and relative motion. Kinetics of a rigid body: equations of motion; work-energy; impulse-momentum; conservation of momentum and energy.

Conservative forces and potential energy.

Precludes additional credit for MAAE 2101.

Prerequisite(s): MATH 1004, MATH 1104 and second-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

CIVE 2200 [0.5 credit]**Mechanics of Solids I**

Stress and strain. Stress-strain relationship: Hooke's law. Torsion of circular shafts. Bending moment and shear force distribution. Flexural stresses. Deflection. Shear stress in beams. Stresses in thin-walled cylinders. Transformation of 2D stress and strain: Mohr's circle. Buckling of columns.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 2202.

Prerequisite(s): MATH 1004 and second-year status in Engineering for B.Eng. or CIVE 2005 for B.A.S. with Concentration in Conservation and Sustainability.

Lectures three hours a week, problem analysis and laboratory three hours a week.

CIVE 2700 [0.5 credit]**Civil Engineering Materials**

Introduction to material science. Structure of atoms. Crystallography. Crystal Imperfections. Characteristics, behaviour and use of Civil Engineering materials: steel, concrete, asphalt, wood, polymers, composites. Specifications. Physical, chemical and mechanical properties. Quality control and material tests. Fatigue. Corrosion. Applications in construction and rehabilitation of structures.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 2700.

Prerequisite(s): second year status for students in an Engineering program or second year standing in a B.A.S. major in Conservation and Sustainability.

Lectures three hours a week, problem analysis and laboratory three hours a week.

CIVE 3202 [0.5 credit]**Mechanics of Solids II**

Shear flow. Definition of shear centre, Saint Venant and warping torsional constants. Behaviour, governing differential equations and solutions for torsion, beam-columns, lateral torsional buckling of doubly symmetric beams, axially loaded doubly symmetric, singly symmetric and asymmetric columns. Failure criterion, fatigue and fracture.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 3202.

Prerequisite(s): CIVE 2200.

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

CIVE 3203 [0.5 credit]**Introduction to Structural Analysis**

Concepts and assumptions for structural analysis: framed structures; joints; supports; compatibility and equilibrium; stability and determinacy; generalized forces and displacements. Principle of Virtual Work: unknown force calculations; influence lines. Complementary Virtual Work: displacement calculations, indeterminate analysis. Introduction to the Stiffness Method of Analysis.

Prerequisite(s): CIVE 2200 and MATH 1004.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3204 [0.5 credit]**Introduction to Structural Design**

Building systems and structural form. Design Philosophy and design process. Limit states design. National Building Code of Canada. Determination of dead, live, snow, wind, and earthquake loads.

Prerequisite(s): CIVE 2200.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3205 [0.5 credit]**Design of Structural Steel Components**

Introduction to CAN/CSA - S16, design and behaviour concepts; shear lag, block shear, local plate buckling, lateral torsional buckling, instantaneous centre, inelastic strength and stability. Design of tension members, axially loaded columns, beams, beam-columns, simple bolted and welded connections.

Prerequisite(s): CIVE 2200 and CIVE 2700.

Recommended prerequisite: CIVE 3204.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3206 [0.5 credit]**Design of Reinforced Concrete Components**

Introduction to CAN/CSA - A23.3; design and behaviour concepts; flexural analysis at service loads; shear, bond, Whitney stress block, under, over reinforced behaviour, ultimate strength. Flexural design of singly reinforced, doubly reinforced T-beams, one-way slabs. Shear design for beams. One-way, two-way slab systems, columns.

Prerequisite(s): CIVE 2200 and CIVE 2700.

Recommended prerequisite: CIVE 3204.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3207 [0.5 credit]**Historic Site Recording and Assessment**

Methods of heritage documentation including hand recording, photography, rectified photography, total station, gps, photogrammetry, and laser scanning. Non-destructive testing techniques; environmental assessment tools for determining air quality and energy efficiency. Multidisciplinary teams for all project work.

Includes: Experiential Learning Activity

Also listed as ARCN 4100.

Prerequisite(s): third-year status in B.Eng. in Architectural Conservation and Sustainability Engineering.

Lectures three hours a week, lab or field work two hours a week.

CIVE 3208 [0.5 credit]**Geotechnical Mechanics**

Soil composition and soil classification. Soil properties, compaction, seepage and permeability. Concepts of pore water pressure, capillary pressure and hydraulic head. Principle of effective stress, stress-deformation and strength characteristics of soils, consolidation, stress distribution with soils, and settlement. Laboratory testing.

Includes: Experiential Learning Activity

Also listed as EARTH 4107.

Prerequisite(s): third-year status in Engineering, or permission of the department. Additional recommended background: EARTH 2404 or equivalent.

Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 3209 [0.5 credit]**Building Science**

Building envelope design and analysis; applied heat transfer and moisture transport; solar radiation; hygrothermal modelling; control of rain, air, vapour, and heat; materials for wall, window, curtain wall, roof, and foundation systems; building envelope retrofit case studies; building code; envelope construction.

Prerequisite(s): MAAE2400 and third-year status in B.Eng. Architectural Conservation and Sustainability Engineering or in Civil Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3304 [0.5 credit]**Transportation Engineering and Planning**

Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion, human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods.

Also listed as GEOG 4304.

Prerequisite(s): third-year status in Engineering, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

CIVE 4200 [0.5 credit]**Matrix Analysis of Framed Structures**

Review of basic structural concepts. Betti's law and applications. Matrix flexibility method, flexibility influence coefficients. Development of stiffness influence coefficients. Stiffness method of analysis: beams; plane trusses and frames; space trusses and frames. Introduction to the finite element method.

Prerequisite(s): CIVE 3203.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4201 [0.5 credit]**Finite Element Methods in Civil Engineering**

Introduction to the theory and application of finite element methods. The relationship with virtual work, Rayleigh-Ritz, system of linear equations, polynomial interpolation, numerical integration, and theory of elasticity is explored. Isoparametric formulations of structural and plane elements are examined. Geotechnical and nonlinear problems are introduced.

Prerequisite(s): CIVE 2200 and fourth year status in engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4202 [0.5 credit]**Wood Engineering**

Structural design in timber. Properties, anatomy of wood, wood products, factors affecting strength and behaviour, strength evaluation and testing. Design of columns, beams and beam-columns. Design of trusses, frames, glulam structures, plywood components, formwork, foundations, connections and connectors. Inspection, maintenance and repair.

Prerequisite(s): CIVE 2200, CIVE 2700 and third-year status in B.Eng.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4208 [0.5 credit]**Geotechnical Engineering**

Strength of soils, steady state seepage, flownets and piping. Stress distribution in soils. Earth pressures: at rest, active and passive. Design of flexible and rigid retaining structures. Stability of excavations, slopes and embankments. Settlement of foundations. Bearing capacity of footings.

Prerequisite(s): CIVE 3208.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4209 [0.5 credit]**Highway Engineering**

Highway planning; highway location and geometric design; traffic engineering; highway capacity; soil classifications; subgrade and base materials; highway drainage; frost action; structural design of rigid and flexible pavements; highway economics and finance; maintenance and rehabilitation.

Prerequisite(s): Fourth year status in engineering.

Recommended prerequisites: CIVE 2004, CIVE 3304 and CIVE 3208.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4301 [0.5 credit]**Foundation Engineering**

A critical study of the theories in soil mechanics and their application to the solution of geotechnical engineering problems. Field investigations, laboratory and field testing, shallow foundations, special footings, mat foundations, pile foundations and excavations. Discussion of new methods and current research.

Prerequisite(s): CIVE 4208.

Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 4302 [0.5 credit]**Reinforced and Prestressed Concrete Design**

Reinforced concrete shear and torsion design. Two-way slab design by Direct Design and Equivalent Frame Method. Behaviour and design of slender reinforced concrete columns. Prestressed concrete concepts; flexural analysis and design; shear design; anchorage zone design; deflection and prestress loss determination. Prerequisite(s): CIVE 3202, CIVE 3203 and CIVE 3206. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4303 [0.5 credit]**Urban Planning**

A systematic approach to urban planning; urban sprawl; data collection; forecasting; standards; space requirements; land use; zoning; transportation; land development; site selection; land capability; layout; evaluation; housing; urban renewal and new towns. Prerequisite(s): fourth-year status in Engineering, second-year standing in B.A.S. (Urbanism), or permission of the Department. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4307 [0.5 credit]**Municipal Hydraulics**

Fluid flow fundamentals. Hydraulics of pipe systems. Open channel flow. Prediction of sanitary and storm sewage, flow rates. Design of water distribution systems, culverts, sanitary and storm sewers. Pumps and measuring devices. Hydraulic and flow control structures. Prerequisite(s): MAAE 2300. Lectures three hours a week, problem analysis one and a half hours a week.

CIVE 4308 [0.5 credit]**Behaviour and Design of Steel Structures**

Behaviour and design of open web steel joists, steel and composite decks, composite beams and columns, stud girders, and plate girders. Design of moment connections, base plates and anchor bolts, and bracing connections. Stability of rigid and braced frames. Design for lateral load effects. Prerequisite(s): CIVE 3205 and fourth-year status in Engineering. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4400 [0.5 credit]**Construction/Project Management**

Systems approach to project planning and control. Analysis of alternative network planning methods: CPM, precedence and PERT; planning procedure; computer techniques and estimating; physical, economic and financial feasibility; implementation feedback and control; case studies. Prerequisite(s): fourth-year status in Engineering. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4403 [0.5 credit]**Masonry Design**

Introduction to structural design in masonry. Properties of masonry materials and assemblages. Behaviour and design of beams, walls and columns. Selected topics including veneer wall systems, differential movement, workmanship, specifications, inspection, maintenance and repair. Lowrise and highrise building design. Prerequisite(s): CIVE 3204, CIVE 3206 and fourth-year status in Engineering or permission of the Department. Also offered at the graduate level, with different requirements, as CIVE 5200, for which additional credit is precluded. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4407 [0.5 credit]**Municipal Engineering**

Introduction to fundamentals of municipal engineering. Water quality: physical, chemical and biological parameters. Water treatment: softening mixing, flocculation, sedimentation, filtration, disinfection, fluoridation. Biological processes. Wastewater treatment: primary, secondary and tertiary treatment. Sludge disposal and wastewater reuse. Solid waste management. Prerequisite(s): fourth-year status in Engineering. Lectures three hours a week, problem analysis one and a half hours a week

CIVE 4500 [0.5 credit]**Computer Methods in Civil Engineering**

Advanced software development for Civil Engineering applications. Examples may be chosen from surveying, transportation, geotechnical and/or structural engineering. Software technologies include object-oriented programming, data base management, Internet-based applications and graphical user interfaces. Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as CIVE 5602, for which additional credit is precluded. Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4601 [0.5 credit]**Building Pathology and Rehabilitation**

Deterioration mechanisms for concrete, timber, steel and masonry structures. Identification of design deficiencies; criteria for selection and design of rehabilitation systems. Design techniques to reduce deterioration in new construction and historical structures. Includes: Experiential Learning Activity. Also listed as ARCN 4200. Prerequisite(s): CIVE 3207 and fourth-year status in B.Eng. in Architectural Conservation and Sustainability Engineering. Lectures three hours a week, lab/field work two hours a week.

CIVE 4614 [0.5 credit]**Building Fire Safety**

Understanding fire-structure interaction and the concepts of fire severity and resistance; behaviour of steel, concrete, and timber buildings exposed to fires; compartment fire dynamics; correlations and computer models to predict fire dynamics; fire retardants; laboratory-scale fire experiments; performance-based approach for building fire safety design.

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering, or permission of the Department.

Lectures three hours a week, problem analysis and laboratories one and one-half hours per week.

CIVE 4907 [1.0 credit]**Engineering Research Project**

A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 4917.

Prerequisite(s): fourth-year status in Engineering and permission of the department.

CIVE 4917 [0.5 credit]**Undergraduate Directed Study**

Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 4907.

Prerequisite(s): permission of the Department and completion of, or concurrent registration in, CIVE 4918. Self study.

CIVE 4918 [1.0 credit]**Design Project**

Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.

Includes: Experiential Learning Activity

Prerequisite(s): ECOR 3800 and fourth-year status in Engineering. Certain projects may have additional requirements.

Lectures two hours alternate weeks, problem analysis three hours a week.

Classical Civilization (CLCV)

Classical Civilization (CLCV) Courses**CLCV 1002 [0.5 credit]****Survey of Greek Civilization**

Introduction to the study of Greek antiquity and the discipline of Classics and its methodologies. Greek culture and society are set in their historical contexts and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period.

Precludes additional credit for CLCV 1000, and CLCV 1109.

Lecture three hours a week.

CLCV 1003 [0.5 credit]**Survey of Roman Civilization**

Introduction to the study of Roman antiquity and the discipline of Classics and its methodologies. The culture and society are set in their historical context and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period.

Precludes additional credit for CLCV 1000 and CLCV 1109.

Lecture three hours a week.

CLCV 1004 [0.5 credit]**Elementary Language Tutorial I**

Elementary study of an ancient language.

Prerequisite(s): Permission of the unit.

Tutorial two hours a week plus out-of-class requirements.

CLCV 1005 [0.5 credit]**Elementary Language Tutorial II**

Elementary study of an ancient language.

Prerequisite(s): Permission of the department.

Tutorial two hours a week plus out-of-class requirements.

CLCV 1008 [0.5 credit]**Introduction to Archaeology I**

Introduction to the history, theory and practice of field archaeology. Excavations from all time periods and global regions will be discussed. Focus will be placed on excavation methods and technology, including dating, that enhance understanding of sites both on land and underwater.

Also listed as ARCY 1008.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week.

CLCV 1009 [0.5 credit]**Introduction to Archaeology II**

Continues the examination of various aspects of field archaeology begun in CLCV 1008. This course places greater focus on recent approaches to the interpretation of remains. These include environmental, cognitive and bioarchaeological approaches.

Also listed as ARCY 1009.

Precludes additional credit for CLCV 2300 (no longer offered).

Lecture three hours a week.

CLCV 2004 [0.5 credit]**Intermediate Language Tutorial I**

Intermediate study of an ancient language.

Prerequisite(s): permission of the unit.

Tutorial two hours a week plus out-of-class requirements.

CLCV 2005 [0.5 credit]**Intermediate Language Tutorial II**

Intermediate study of an ancient language.

Prerequisite(s): permission of the unit.

Tutorial two hours a week plus out-of-class requirements.

CLCV 2008 [0.5 credit]**Greek and Roman Epic**

An examination of the genre of epic in Greco-Roman antiquity, including a close reading of translations of Homer and Vergil.

Also listed as ENGL 2012.

Precludes additional credit for CLCV 2009 and ENGL 2009 (no longer offered).

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

CLCV 2010 [0.5 credit]**Greek and Roman Drama**

An examination of the genres of tragedy and comedy in Greco-Roman antiquity.

Also listed as ENGL 2605.

Precludes additional credit for CLCV 2009 or ENGL 2009 (no longer offered).

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

CLCV 2100 [0.5 credit]**Scientific and Medical terminology**

Examination of Ancient Greek and Latin roots of technical terms found in the sciences, engineering, and medicine.

Lecture three hours a week.

CLCV 2103 [0.5 credit]**Greek Religion**

A study of religion in ancient Greece.

Also listed as RELI 2735.

Precludes additional credit for CLCV 2102 and RELI 2734.

Lecture three hours a week.

CLCV 2104 [0.5 credit]**Roman Religion**

A study of religion in ancient Rome.

Also listed as RELI 2737.

Precludes additional credit for CLCV 2102 and RELI 2734.

Lecture three hours a week.

CLCV 2105 [1.0 credit]**Ancient Philosophy: The Search for Wisdom**

An exploration of ancient philosophy as a search for wisdom and happiness from its Presocratic beginnings in Greece to its development in the Hellenistic world and Imperial Rome. Emphasis on philosophy as a contemplative activity and as a way of life.

Also listed as PHIL 2005.

Precludes additional credit for PHIL 2006, CLCV 2006, PHIL 2007, CLCV 2007 (no longer offered).

CLCV 2303 [0.5 credit]**Greek Art and Archaeology**

The art, architecture and archaeology of ancient Greece. Vase painting, sculpture, architecture, town planning and analogous arts.

Also listed as ARTH 2102.

Precludes additional credit for CLCV 2302 (no longer offered) and ARTH 2100 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2304 [0.5 credit]**Roman Art and Archaeology**

The art, architecture and archaeology of the ancient Romans. Vase painting, sculpture, architecture, town planning and analogous arts are studied.

Also listed as ARTH 2105.

Precludes additional credit for CLCV 2302 and ARTH 2100.

Prerequisite(s): second-year standing or permission of the unit.

CLCV 2305 [1.0 credit]**Ancient Science and Technology**

The development and application of ancient science and technology in the fields of ancient engineering, machinery, metallurgy, transport, building, agriculture and Hippocratic medicine; the social position of craftsmen and artisans, the attitude of intellectuals to science and manual labour, the effects of slavery.

Also listed as TSES 2305.

Prerequisite(s): second-year standing or permission of the Department. This course is suitable for students with no previous knowledge of Greece or Rome.

Lecture three hours a week.

CLCV 2500 [0.5 credit]**Classical Mythology**

A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth.

Also listed as ENGL 2500.

Precludes additional credit for CLCV 2000 and ENGL

2007 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2902 [0.5 credit]**Origins of the Greeks**

The history of ancient Greece from the Bronze Age through the Archaic period.

Also listed as HIST 2902.

Precludes additional credit for CLCV 2900 and HIST 2900.

Prerequisite(s): second-year standing or permission of unit.

Lecture three hours a week.

CLCV 2903 [0.5 credit]**Democracy to Alexander**

The history of ancient Greece from the classical period to Alexander.

Also listed as HIST 2903.

Precludes additional credit for CLCV 2900 and HIST 2900.

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2904 [0.5 credit]**Rise of the Roman Empire**

The history of ancient Rome from early Rome to the end of the Republic.

Also listed as HIST 2904.

Precludes additional credit for CLCV 2901 and HIST 2901.

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2905 [0.5 credit]**Rome of the Caesars**

The history of ancient Rome from the end of the Republic to the coming of Islam.

Also listed as HIST 2905.

Precludes additional credit for CLCV 2901 (no longer offered) and HIST 2901 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lecture three hours a week.

CLCV 2906 [0.5 credit]**Studies in Classical Civilization**

A study of a selected topic in ancient history, literature, languages, culture, archaeology and/or technology.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3000 [0.5 credit]**Topics in Ancient History**

A study of a selected topic in ancient history.

Also listed as HIST 3000.

Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3001 [0.5 credit]**Early Greek Philosophy**

A study of the pre-Socratic philosophers and of the Sophists and Socrates.

Also listed as PHIL 3001.

Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Philosophy department.

Lectures three hours a week.

CLCV 3003 [0.5 credit]**Topics in Classical Civilization**

A study of a selected topic in classical civilization.

Prerequisite(s): third-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3010 [0.5 credit]**The Later Roman Empire**

The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire.

Also listed as HIST 3010.

Precludes additional credit for CLCV 3002 and HIST 3002.

Prerequisite(s): a 2000-level CLCV course.

Lecture three hours a week.

CLCV 3011 [0.5 credit]**Topics in Ancient Philosophy**

A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle.

Also listed as PHIL 3000.

Prerequisite(s): 0.5 credit in PHIL and second-year standing, or permission of the Philosophy department.

Lectures three hours a week.

CLCV 3201 [0.5 credit]**Studies in Greek History**

Study of a period or theme in Greek History.

Also listed as HIST 3009.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3202 [0.5 credit]**Studies in Roman History**

Study of a period or theme in Roman History.

Also listed as HIST 3101.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3215 [0.5 credit]**Ancient Greek Science**

The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).

Also listed as HIST 3215.

Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lecture three hours a week.

CLCV 3301 [0.5 credit]**Field Work I: Greek and Roman World**

Students will participate for a minimum of three weeks on an archaeological field project (i.e., excavation or survey) relevant to the Greek and Roman world. They will learn archaeological documentation and the analysis, recording, and processing of finds.

Includes: Experiential Learning Activity

Also listed as ARCY 3301.

Prerequisite(s): CLCV 1008 and CLCV 1009 or CLCV 2300 and permission of the unit. Permission of the unit is required to repeat this course.

CLCV 3306 [0.5 credit]**Studies in Greek Art**

A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year.

Also listed as ARTH 3102, RELI 3732.

Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3307 [0.5 credit]**Studies in Roman Art**

A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year.

Also listed as ARTH 3105, RELI 3733.

Precludes additional credit for RELI 3731 and ARTH 3101 (no longer offered) and RELI 3306 (if taken summer 2005, summer 2006, summer 2007).

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3400 [0.5 credit]**Greek and Roman Studies Abroad**

This course combines academic study in Canada with first hand examination of museum collections and sites of the ancient world, normally in Greece and Italy. Course content varies from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): 1.0 credit in Greek and Roman Studies, any level (CLCV, GREK, or LATN. Permission of the unit is required to repeat this course.

Hours to be arranged.

CLCV 3701 [0.5 credit]**Studies in Greek Literature**

A study of an author or topic in Greek literature. Contents of this course vary from year to year.

Also listed as ENGL 3008.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 3702 [0.5 credit]**Studies in Roman Literature**

A study of an author or topic in Roman literature.

Also listed as ENGL 3009.

Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.

Lecture three hours a week.

CLCV 4000 [0.5 credit]**Field Work II: Greek and Roman World**

Students participate for a minimum of three weeks in a position of responsibility (for example, as a trench supervisor or lab assistant) on an archaeological field project relevant to the Greek and Roman world.

Includes: Experiential Learning Activity

Also listed as ARCY 4000.

Prerequisite(s): CLCV 3300 and permission of the unit. Permission of the unit is required to repeat this course.

Field work

CLCV 4210 [0.5 credit]**Topics in Ancient History**

Intended for Honours students in History and Classics who should normally be in the third and fourth-years.

Includes: Experiential Learning Activity

Also listed as HIST 4210.

Prerequisite(s): CLCV 2902 (HIST 2902), CLCV 2903 (HIST 2903) or CLCV 2904 (HIST 2904), CLCV 2905 (HIST 2905) or CLCV 3201 or CLCV 3202 or permission of the unit.

Seminar three hours a week.

CLCV 4800 [0.5 credit]**Seminar in Greek and Roman Studies**

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.

Seminar three hours a week.

CLCV 4801 [0.5 credit]**Seminar in Greek and Roman Studies**

Includes: Experiential Learning Activity
 Prerequisite(s): fourth-year standing in the Greek and Roman Studies B.A. program, or permission of the department.
 Seminar three hours a week.

CLCV 4900 [0.5 credit]**Directed Readings and Research**

These courses consist of supervised readings and research projects in a specific area of Classical Civilization to be chosen in consultation with a faculty Supervisor who agrees to oversee a student's proposed research.
 Includes: Experiential Learning Activity
 Prerequisite(s): fourth-year Honours standing and permission of the unit.

Co-operative Education (COOP)

Co-op (COOP) Courses**COOP 1000 [0.0 credit]****Co-op Preparation**

This mandatory course introduces Co-op students to the Co-operative Education Program, job search, application, and interview processes while preparing students for the transition from university to a professional work environment. Graded SAT/UNSAT.
 Prerequisite(s): Restricted to co-op students.
 Online eight-week six-module course.

Cognitive Science (CGSC)

Cognitive Science (CGSC) Courses**CGSC 1001 [0.5 credit]****Mysteries of the Mind**

Challenges faced in understanding the mind, and some of the approaches cognitive science has brought to bear on them. Topics may include the nature of knowledge, how we learn, the extent to which human thinking is rational, biases in thinking, and evolutionary influences on cognition.
 Lectures three hours per week.

CGSC 1005 [0.5 credit]**Computational Methods in Cognitive Science**

Introduction to computational methods, with an emphasis on programming. Topics and assignments will focus on applications in cognitive science. No prior computing experience required.
 Includes: Experiential Learning Activity
 Lecture three hours and tutorial one and a half hours a week.

CGSC 2001 [0.5 credit]**Theories in Cognitive Science**

An integrated background of the discipline of Cognitive Science, with an historical overview (1940's onward) and examination of the extent to which the discipline has assimilated the collective knowledge of contributing disciplines (e.g., psychology, philosophy, linguistics, artificial intelligence and neuroscience).
 Prerequisite(s): second-year standing and FYSM 1607 or CGSC 1001, or permission of the Department.
 Lectures three hours a week.

CGSC 2002 [0.5 credit]**Methods in Cognitive Science**

Selected topics in cognitive science covered from the perspectives of psychology, computer science, linguistics, philosophy, and other related disciplines. Students may be required to complete independent research projects.
 Includes: Experiential Learning Activity
 Prerequisite(s): CGSC 1001 or FYSM 1607, second year standing, or permission of the Department. Restricted to students enrolled in B.Cog.Sc. programs.
 Seminars and tutorials six hours per week.

CGSC 3004 [0.5 credit]**Philosophy and Cognitive Science**

An examination of the significance and role of philosophy in cognitive science. Topics may include: philosophical methods for studying the mind, prospects for naturalizing consciousness and intentionality, assessing competing models of the mind.
 Prerequisite(s): CGSC 2001 and PHIL 2501, and third-year standing.
 Seminar three hours per week.

CGSC 3201 [0.5 credit]**Cognitive Processes**

An examination of research findings on cognitive processes. Topics may include attention, speech perception, memory, intelligence, reasoning, learning, working memory, reading, and mathematics.
 Prerequisite(s): third-year standing, and CGSC 2001 or PSYC 2700.
 Seminar three hours per week.

CGSC 3301 [0.5 credit]**Language and Cognitive Science**

Issues related to language and cognitive science are examined through a detailed consideration of selected topics.
 Prerequisite(s): third-year standing, and CGSC 2001.
 Seminar three hours per week.

CGSC 3501 [0.5 credit]**Cognitive Neuroscience**

Issues related to the role of cognitive neuroscience research in cognitive science are examined through a detailed consideration of selected topics.
 Prerequisite(s): third-year standing and CGSC 2001.
 Seminar, three hours per week.

CGSC 3601 [0.5 credit]**Artificial Intelligence and Cognitive Science**

An introduction to the contribution of artificial intelligence and computer modeling of cognitive processes to cognitive science.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 4001.

Prerequisite(s): third-year standing and CGSC 2002 and (CGSC 1005 or COMP 1005). Restricted to students enrolled in B.Cog.Sc. Honours.

Seminars and labs six hours per week.

CGSC 3704 [0.5 credit]**Cognitive Science and the Digital Humanities**

Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.

Also listed as DIGH 3704.

Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.

Seminar three hours per week.

CGSC 3908 [0.5 credit]**Honours Seminar in Cognitive Science**

Major theories and empirical approaches within Cognitive Science are examined through a detailed consideration of selected topics. Students are required to complete independent research projects to prepare for their fourth-year honours theses.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 3001 (no longer offered) and CGSC 3002 (no longer offered).

Prerequisite(s): third year standing, CGSC 2001 and CGSC 2002, and enrolment in B. Cog. Sc. Honours with a CGPA in the major requirements of 8.0.

Seminars and tutorials six hours per week.

CGSC 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

CGSC 4601 [0.5 credit]**Cognitive Modelling in Cognitive Science**

Introduction to the field of cognitive modelling. Different modelling systems and how to evaluate them against human data; how to create cognitive models using the ACT-R cognitive architecture.

Prerequisite(s): third year standing, CGSC 2001, and (CGSC 1005 or COMP 1005).

Also offered at the graduate level, with different requirements, as CGSC 5601, for which additional credit is precluded.

Seminar three hours per week, tutorial one and a half hours per week.

CGSC 4801 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest.

Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 4802 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest.

Normally students may not offer more than one credit of independent study in their total program (including independent study credits taken through other departments).

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and permission of the Department.

CGSC 4900 [0.5 credit]**Special Topics in Cognitive Science**

The topic of this course will vary from year to year. Students may register in more than one section of CGSC 4900 but may register in each section only once.

Prerequisite(s): each section will have its own prerequisites and permission of the department if is required.

Seminar three hours per week.

CGSC 4908 [1.0 credit]**Honours Thesis**

Interdisciplinary thesis. In developing a thesis, students must consult the Undergraduate Supervisor. Only the Undergraduate Supervisor can assign a supervisor or grant approval to register in this course. Faculty regulations governing Honours Research Essays and Honours Theses apply.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 4909.

Prerequisite(s): fourth year standing, CGSC 3908, and enrolment in B.Cog.Sc. Honours with a major CGPA of 8.0.

CGSC 4909 [1.0 credit]**Honours Project**

Interdisciplinary project. Students engage in one or more group research projects.

Includes: Experiential Learning Activity

Precludes additional credit for CGSC 4908.

Prerequisite(s): 4th year standing, enrolment in B. Cog. Sc. Honours.

Seminar

Communication and Media Studies (COMS)

Communication and Media Studies (COMS) Courses

COMS 1001 [0.5 credit]

Foundations in Communication and Media Studies

An exploration of past and present media, patterns of change, and key approaches to their study.

Includes: Experiential Learning Activity

Precludes additional credit for COMS 1000, COMM 1101. Lecture and discussion groups.

COMS 1002 [0.5 credit]

Current Issues in Communication and Media

An exploration of communication and media in relation to contemporary political, technological and cultural issues, with a focus on Canada.

Includes: Experiential Learning Activity

Precludes additional credit for COMS 1000, COMM 1101. Lecture and discussion groups.

COMS 2003 [0.5 credit]

Theoretical Foundations in Communication and Media Studies

The development of communication theory in the context of major social, economic and cultural periods and events. Emphasis on the central debates and traditions that have shaped and defined the field.

Precludes additional credit for COMM 2101 (no longer offered) and COMM 2100 (no longer offered).

Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second-year standing in Communication and Media Studies (including BGrNS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion groups three hours a week

COMS 2004 [0.5 credit]

Introduction to Communication Research

Introduction to the scientific method as interpreted through major traditions in Communication and Media Studies. The course addresses the relationship between theory and evidence, research design, ethics and data management.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 2000 (no longer offered), COMM 2001 (no longer offered).

Prerequisite(s): COMS 1001 and COMS 1002, or JOUR 1001 and JOUR 1002, and second year standing in Communication and Media Studies (including BGrNS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

COMS 2200 [0.5 credit]

Big Data and Society

How big data and small data shape society. Databases as a form of media. Topics may include: data policy and regulation, the politics and ethics of big data, data and decision-making, and data as discourse.

Includes: Experiential Learning Activity

Prerequisite(s): Second-year standing or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2300 [0.5 credit]

Communication as Propaganda

How business, government, and civil society actors have used media messages to persuade, influence, and manipulate the public. The impacts of propaganda on individuals and society, the roles of different media technologies in facilitating propaganda, and public resistance to propaganda.

Precludes additional credit for COMM 2301 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAPM 1000, and second-year standing in Communication and Media Studies (including BPAPM and BGrNS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2400 [0.5 credit]

Climate Change and Communication

The class examines the role of communication in shaping the relationship of climate change, science, politics, popular culture, social movements, technology, and societal transformation.

Prerequisite(s): Second year standing and enrollment in Communication and Media Studies or permission from the School of Journalism and Communication.

Lecture, three hours a week

COMS 2500 [0.5 credit]

Communication and Science

How expert knowledge (particularly scientific, medical, and technical) is communicated in the public realm. Topics may include scientific advances and new technologies, health risks, environmental/ climate change, and cultural/ ideological positioning of science.

Prerequisite(s): second-year standing or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2501 [0.5 credit]**Media Law**

A survey of laws that affect the Canadian media including the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common-law limitations on freedoms of the press, including publication bans, libel and contempt of court.

Also listed as JOUR 2501, MPAD 2501.

Precludes additional credit for COMM 2501 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002 or PAMP 1000, and second-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lecture three hours a week.

COMS 2504 [0.5 credit]**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers, including the nature of meaning, the connections between language, communication and cognition, and language as a social activity.

Also listed as PHIL 2504, LING 2504.

Precludes additional credit for COMM 2504 (no longer offered).

Prerequisite(s): second-year standing.

Lectures three hours a week.

COMS 2600 [0.5 credit]**Communication and Culture**

An introduction to the major industries, institutions, regulatory frameworks and key organizations responsible for cultural production in Canada.

Precludes additional credit for COMM 2401 (no longer offered), COMM 2601 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 2700 [0.5 credit]**Global Media and Communication**

An introduction to global media and communication, with an emphasis on debates about media power and expansion, digitalization, technology transfer, and societal implications/changes. Students will investigate historical and contemporary contexts of global and transnational communication through a variety of approaches and perspectives.

Precludes additional credit for COMM 3405/JOUR 3405 (no longer offered).

Prerequisite(s): COMS 1001 or COMS 1002 or JOUR 1001 or JOUR 1002, and second-year standing in Communication and Media Studies (including BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3001 [0.5 credit]**Quantitative Research in Communication**

An introduction to basic statistical methods in media and communication studies.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3001 (no longer offered).

Prerequisite(s): COMS 2004 and third-year standing in Communication and Media Studies, or third-year standing in BPAPM- or BGIInS-related specializations and streams, or permission of the School of Journalism and Communication.

Lecture and lab three hours a week.

COMS 3002 [0.5 credit]**Qualitative Research in Communication**

An introduction to interpretive methods in media and communication studies.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3002 (no longer offered).

Prerequisite(s): COMS 2004 and third-year standing in Communication and Media Studies, or third-year standing in BPAPM- or BGIInS-related specializations and streams, or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

COMS 3100 [0.5 credit]**Introduction to Political Management**

Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.

Also listed as POLM 3000, PSCI 3410.

Precludes additional credit for COMM 3100 (no longer offered).

Prerequisite(s): third-year standing.

Lectures three hours a week.

COMS 3108 [0.5 credit]**Media Industries and the Network Society**

Examines the theoretical frameworks and major issues and debates relating to media industries and institutions in Canada and internationally.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3108 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3109 [0.5 credit]**Communication, Culture and Identity**

Examines the relationship between media, communication, and identity categories. The course explores identity formation as a cultural phenomenon including questions of race, ethnicity, gender, class, and sexuality.

Precludes additional credit for COMM 3109 (no longer offered).

Prerequisite(s): third-year standing and enrollment in Communication and Media Studies (including BGINs related specializations and streams) or in the Minor in Critical Race Studies, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3110 [0.5 credit]**Comic Books and Graphic Novels**

The history, political economy, and culture of comics as a distinct medium of communication, and the relationship between comic book publishing and other cultural industries.

Prerequisite(s): Third year standing and enrollment in Communication and Media Studies or permission from the School of Journalism and Communication.

Lecture, three hours a week

COMS 3111 [0.5 credit]**Racism and Digital Media**

Explores the historical, social, and systemic underpinnings of racism in relation to digital media. The course considers the emergence of digital media and its impact on racism. Students will learn about several relations, from World War II computers, to Web 2.0, to activism, and more.

Prerequisite(s): Third year standing in Communication and Media Studies or permission from the School of Journalism and Communication.

Lecture, three hours a week

COMS 3302 [0.5 credit]**Political Communication**

Examines the relationship between various kinds of communication and political activity in a variety of contexts. Case studies will be drawn from speeches, political campaigns, and debates, using a variety of media forms, from photographs to web sites.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3302 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3308 [0.5 credit]**Critical Studies in Advertising and Consumer Culture**

A critical analysis of major constructs and basic mechanisms of advertising, social marketing and other aspects of consumer culture. The course examines the social, political-economic and cultural implications of consumer culture.

Precludes additional credit for COMM 3301 (no longer offered) and COMM 3308 (no longer offered).

Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures and discussion groups three hours a week.

COMS 3310 [0.5 credit]**Critical Perspectives of Public Relations**

A critical examination of key aspects of public relations, including histories of PR, media representations of PR, gender and public relations, and the role of PR in business, politics and civil society.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4304 (no longer offered).

Prerequisite(s): third-year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3311 [0.5 credit]**Media and Communication in Regional Contexts**

Provides a historical overview of the development of media technologies, and an understanding of the place of media within the political, regulatory, and legal activities of different international regions (e.g., Europe, Asia, Africa, Latin America, etc.).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGINs related specializations and streams), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3400 [0.5 credit]**Ethical Controversies in Media and Communication**

Explores ethical problems and controversies relating to research in media and communication. Focuses on rights and responsibilities of researchers and practitioners as relates to media consumers, producers, and professional communicators in an age when communication circulates quickly within and across borders and other boundaries.

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM and BGINs related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3401 [0.5 credit]**Communications Regulation in Canada**

Examines historical and contemporary issues in the regulation of communication practices and institutions in Canada.

Precludes additional credit for COMM 3401 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3403 [0.5 credit]**Communication, Technology and Culture**

Examines the relationship between communication technology and society, including factors that contribute to changes in the collection, storage and distribution of information and their cultural implications.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 3403 (no longer offered).

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lecture three hours a week.

COMS 3404 [0.5 credit]**Music Industries**

An introduction to the structure and history of the music industries.

Also listed as MUSI 3403.

Precludes additional credit for COMM 3404 (no longer offered).

Prerequisite(s): second year standing.

Lectures three hours a week.

COMS 3406 [0.5 credit]**Media Audiences and Users**

Examines the role of audiences in contemporary media industries. Topics include history of audience studies, ratings and the audience commodity, active audience theory, and media fandom.

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3407 [0.5 credit]**Comparative Media Studies**

The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.

Also listed as JOUR 3407.

Precludes additional credit for COMM 3407 (no longer offered).

Prerequisite(s): Third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3410 [0.5 credit]**Visual Media and Communication**

Examines the central importance of visual imagery in contemporary media, culture and everyday life. Draws connections between historical/contemporary explanations of 'the visual,' and how texts and technologies reflect the context and cultural values of the environments that produce them, and the challenges for regulation.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3411 [0.5 credit]**Media and Social Activism**

Examines links between media and activism through the lens of past and present social movements and protest events. Addresses leading theories that help conceptualize various types of activist movements, with a focus on the role of media in shaping activist identity and political opportunity.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3412 [0.5 credit]**Communication and Health**

The concept of health as a sociocultural phenomenon; the many ways that health issues are communicated, defined, represented, and framed.

Prerequisite(s): third year standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 3500 [0.5 credit]**Current Issues in Communication and Media Theory**

Examines theoretical debates and issues facing the field of Communication and Media Studies today.

Precludes additional credit for COMM 2101, COMM 2102 (no longer offered).

Prerequisite(s): COMS 2003 and third-year standing in Communication and Media Studies (including BGIInS related specializations and streams), or permission of the School of Journalism and Communication.

Lectures and discussion groups three hours a week.

COMS 3800 [0.5 credit]**Special Topic in Communication and Media Studies**

A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.

Prerequisite(s): third-year standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lecture three hours a week.

COMS 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

COMS 4001 [0.5 credit]**Sport and/as Media**

A critical exploration of the culture and political economy of sport including cultural norms and questions of representation in and around sports across an array of media.

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission from the School of Journalism and Communication.

Seminar, 3 hours a week

COMS 4002 [0.5 credit]**Media Fandom**

Examines media fans as audiences. Topics may include fan cultures, digital fandom, identity, and audience labour.

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission from the School of Journalism and Communication.

Recommended: COMS 3406: Media Audiences and Users.

Seminar, 3 hours a week

COMS 4004 [0.5 credit]**Communication and Discourse**

Examines the development of theory and methods related to discourse and its use in the analysis of images and texts.

Precludes additional credit for COMM 4004 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4305 [0.5 credit]**Media and Religion**

Critical examination of the ways religion mediates communicative practices, engages with media technologies, and is mediated in mainstream or popular culture. Topics may include: secularization and post-secularization; the politics of representation; religious organizations as communicative actors; fundamentalism.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4306 [0.5 credit]**Media and Conflict**

Media representations of conflict such as war and terrorism, and how they influence the collective imagination.

Precludes additional credit for COMM 4306 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4311 [0.5 credit]**Environmental Communication**

Examines environmental, animal, and earth observing media and pays special attention to the production of visual materials. The course explores the influence of media systems on the production, dissemination, and meaning of environmental observations and looks at sites of contemporary environmental contention.

Prerequisite(s): fourth-year Honours standing and enrollment in Communication and Media Studies or in the Minor in Environmental and Climate Humanities, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4312 [0.5 credit]**Crisis and Risk Communication**

Examines crises and risks from the perspective of communication. The course explores the role of various media in shaping risk perceptions and constructions of crisis, the politics of crisis and risk management, symbolic dimensions in crisis construction, and ethical dilemmas.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4313 [0.5 credit]**Screen Studies**

Issues in the past, present and future of film, television and related media. Screens are examined as media that represent and shape values and culture, as technologies that are produced and purchased, and as objects that are regulated through policy.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4315 [0.5 credit]**Communication and the Built Environment**

How communication occurs in conjunction with the built environment, with special attention to cultural artefacts such as houses, schools, factories, prisons, office buildings, roads, parks, and the urban (and suburban) environment. Various models, theories, and philosophies of the built environment are considered.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4316 [0.5 credit]**Indigenous Media in Global Contexts**

Overview of Indigenous global media exploring film and film festivals, television networks, media arts, and the Internet. We will discuss struggles over mediated self-representation as well as debates over what constitutes Indigenous media relating to aesthetics, community affiliation, and identity.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4317 [0.5 credit]**Digital Media and Global Network Society**

A critical and analytical understanding of the way digital media are reshaping society and are shaped by societal structures and forces; on the implications of digital media on various aspects of social life globally, including culture, politics, law, privacy, journalism, and collective organizing/social movements.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies (including BPAPM and BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4337 [0.5 credit]**Communication and Public Affairs Strategies**

This hands-on course teaches students how to develop, design, and execute a public affairs strategy. Emphasis on understanding the interaction between public institutions and stakeholders and how effective public affairs strategies can be designed to help organizations achieve goals through public or opinion leader persuasion.

Includes: Experiential Learning Activity

Also listed as PAMP 4000.

Prerequisite(s): fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4401 [0.5 credit]**Global Internet Policy and Governance**

Public interest and policy battles over critical internet resources and implications for development of the internet, citizens' rights and freedoms, the economy, and democratic culture; common carriage, privacy, security and surveillance, access, speech rights, and diversity of information sources.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4401 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM and BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4403 [0.5 credit]**Digital Media Industries**

Key approaches to the study of media as industries and how economics, markets and technologies intersect with social choices, politics and power to shape how decisions are made about the design, ownership, organization and control of media.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4403 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4405 [0.5 credit]**The Networked Self**

How notions of identity are changing as we conduct our lives through networked media and communication such as social media, online search, the Internet of Things, and wearable devices. Subjectivity, personhood, posthumanism, algorithmic control, and privacy.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4406 [0.5 credit]**Open Government and Communication**

The contemporary open government movement; how communication can be used to improve governance and to foster a more collaborative relationship between governments and citizens. Access to information, the challenges of open data, expectations of transparency, and models of citizen engagement/consultation.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM and BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4407 [0.5 credit]**Communication and Critical Data Studies**

Theoretical perspectives, ethical problems, and contemporary issues relevant to communication and data studies. Students will critically examine the rise of 'big data' and 'datafication' as socio-technical phenomena that have become a crucial part of our communication landscape.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4408 [0.5 credit]**Creative Work**

Contemporary trends affecting creative work in cultural industries. How careers in the arts, culture and media are increasingly desirable as a way for individual workers to find personal fulfillment and as a means of reinvigorating post-industrial economies.

Prerequisite(s): fourth-year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4410 [0.5 credit]**Mobile Media**

Critical examination of the history, development, and expansion of mobile media and its impact on culture, connectivity, and practice; locative media practices, geo-coding, wireless communication, mobile technologies, and user experience in everyday life.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4411 [0.5 credit]**Algorithmic Culture**

The ways in which computerized algorithms engage in the traditional work of culture: the sorting, classifying, and hierarchizing of people, places, objects, and ideas to produce new habits of thought, conduct, expression, and material outcomes.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4412 [0.5 credit]**Game Studies**

Games as media. The history of gaming and mediated play in terms of technology and form, industry, labour, gender and subcultural practice.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BPAPM related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4501 [0.5 credit]**Digital Media Production**

This workshop introduces practice-based tools and techniques relevant in contemporary professional communication, such as basic web development, podcasting, and digital photography.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4502 [0.5 credit]**Storytelling in the Digital Age**

In this workshop students learn to write compelling stories for the digital age. They engage with examples of great storytelling across print and online platforms, from magazines and newspapers to blogs and podcasts, to gain a deeper understanding of what makes some stories stand out.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S.

Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4503 [0.5 credit]**Visualizing Social Media: Hashtags, keywords, & conversations**

This workshop introduces a range of methods and practices in data mining and analytics. Techniques include data and text mining, data analysis (including sentiment and social network analysis), data visualization and modeling. Opportunity to work with analytics and mapping software on students' own projects.

Includes: Experiential Learning Activity

Prerequisite(s): COMS 3001 and fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4504 [0.5 credit]**Engaging the Public: Stakeholders, participation & consultation**

This workshop introduces the challenges of conceptualizing and conducting public consultations. This includes audience or participant selection, a range of consultation techniques and formats, marketing and communication, analysis, as well as an awareness of policies and regulations governing consultations.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4505 [0.5 credit]**Professional Writing and Speaking**

In this workshop students develop skills in professional written communication, such as press releases, blogs, op-eds, policy briefs, and speeches. Students will also hone their public speaking skills presenting their written work in different formats.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4506 [0.5 credit]**Event Management and Community Partnerships**

This workshop introduces the stages of event management for potential community partners. This includes conceptualization, marketing and sponsorships, production and financing, to risk management.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in B.Co.M.S. Honours and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4507 [0.5 credit]**Professional Communication Research**

Students will work in a team-based environment to carry out empirical research in support of current faculty-led projects. In addition to learning advanced research techniques, students will develop project management and collaborative research skills.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4000 (no longer offered), COMM 4002 (no longer offered), COMS 4006 (no longer offered).

Prerequisite(s): COMS 3001 or COMS 3002, and fourth-year Honours standing in Communication and Media Studies (including BPAPM related specializations), and permission of the School of Journalism and Communication.

Workshop three hours a week.

COMS 4602 [0.5 credit]**Children, Youth and Media**

Historical and contemporary ways in which children and youth relate to the media and popular culture.

Precludes additional credit for COMM 4602 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4603 [0.5 credit]**Diaspora and Communication**

The impact of various forms of diasporic communication on the shaping of contemporary national and international society.

Precludes additional credit for COMM 4603 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4604 [0.5 credit]**Media, Gender and Sexuality**

Critical examination of the intersection of media and gender, including constructions of femininity, masculinity, and other issues of sexuality.

Precludes additional credit for COMM 3601 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4605 [0.5 credit]**Media, Race and Ethnicity**

Critical examination of how issues of race and ethnicity intersect with contemporary media.

Precludes additional credit for COMM 3602 (no longer offered).

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4606 [0.5 credit]**Global Media and Popular Culture**

Key theories and concepts that have shaped the study of global media and its impact on popular cultures around the world.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies (including BGIInS related specializations), or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4607 [0.5 credit]**Communication and Food**

Food in and as communication. Food and identity, food and culture, food environments, food systems, food politics, and food and community development.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4608 [0.5 credit]**Sound Studies**

How hearing and listening practices have changed over time, and the role of sound technology in shaping our understanding of each other, our world, and ourselves.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies, or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4800 [0.5 credit]**Special Topic in Communication and Media Studies**

A selected topic not ordinarily treated in the regular course program. The choice of topic varies from year to year. Check with the Communication and Media Studies program regarding the topic offered.

Prerequisite(s): fourth year Honours standing in Communication and Media Studies or permission of the School of Journalism and Communication.

Lectures three hours a week.

COMS 4908 [1.0 credit]**Honours Research Essay**

The Honours Research Essay (HRE) provides eligible students with an opportunity to complete an independent research essay under the supervision of a faculty member. The HRE must be completed over two consecutive academic terms, beginning in the fall term.

Includes: Experiential Learning Activity

Precludes additional credit for COMM 4908 (no longer offered).

Prerequisite(s): fourth year honours standing in Communication and Media Studies (including BGIInS related specializations), with a CGPA of 10.0 or higher, or permission of the Undergraduate Supervisor.

Unscheduled.

Communication Courses for Disciplines and Professions (CCDP)

Communication Courses for Disciplines and Professions (CCDP) Courses

CCDP 2004 [0.5 credit]**Communication Skills for NET**

Development of competence in written and oral communication in relation to network design, development, and management. Focus on technical reports, proposals, and other related project documents; formal and informal oral presentations.

Includes: Experiential Learning Activity

Precludes additional credit for NET 2004 (no longer offered).

Prerequisite(s): restricted to students with second-year standing in the B.I.T. degree program.

Lecture and tutorial three hours a week.

CCDP 2100 [0.5 credit]**Communication Skills for Engineering Students**

Development of competence in written and oral communication in engineering. Focus on professional written documents (proposals, technical explanations, research reports, summaries); written responses to engineering communications; related oral work. Attendance and participation are compulsory.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students with second-year standing in the Bachelor of Engineering program. All ESL requirements must be successfully completed; this course may not be taken concurrently with any ESLA course. Not repeatable for credit when successfully completed with a grade of C or higher.

Seminars three hours a week.

CCDP 3003 [0.5 credit]**Communication Skills for IMD**

Development of competence in written and oral communication related to multimedia design. Needs analyses, use-case scenarios, development and management of content, technical reports, and related project documents; oral presentations.

Includes: Experiential Learning Activity

Precludes additional credit for IMD 3003 (no longer offered).

Prerequisite(s): restricted to students with second-year standing in the B.I.T. degree program.

Lecture and tutorial three hours a week.

CCDP 3006 [0.5 credit]**Communication Skills for IRM**

Development of competence in written and oral communication in relation to information resource management. Focus on reports, proposals, technical documentation and other related project documents. Also covers formal and informal oral presentations.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students with second-year standing in the B.I.T. degree program.

Lecture and tutorial three hours a week.

CCDP 3008 [0.5 credit]**Communication Skills for OSS**

Development of competence in written and oral communication. Focus on technical reports, proposals, and other related project documents; formal and informal oral presentations.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3008.

Prerequisite(s): Restricted to students with second-year standing in the B.I.T. degree program.

Seminars three hours a week.

Computer Science (COMP)

Computer Science (COMP) Courses**Notes:**

1. Some of the following Computer Science courses are cross-listed from other parts of the Calendar. In every such case, only one course is actually offered and the two numbers are alternate identifiers for this single course. Students in the B.C.S. program should register in such a course under the Computer Science (COMP) number.

COMP 0999 [0.0 credit]**COMP Matters****COMP 1001 [0.5 credit]****Introduction to Computational Thinking for Arts and Social Science Students**

An introduction to computational thinking and its applications to the arts and social sciences. Students will gain computational thinking skills by exploring data representation, basic programming concepts, a selection of algorithms, and advanced usage of software packages for the arts and social sciences.

Precludes additional credit for COMP 1004 (no longer offered). This course cannot be taken for credit by students in Business, Engineering, Computer Science, Mathematics or Science.

Lectures three hours a week.

COMP 1005 [0.5 credit]**Introduction to Computer Science I**

Introduction to computer science and programming. Topics include: algorithm design; control structures; variables and types; linear collections; functions; debugging and testing. Special attention is given to procedural programming in a modern language, computational thinking skills, and problem decomposition.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, CGSC 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1006 [0.5 credit]**Introduction to Computer Science II**

A second course in programming emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2400, BUSI 2402, COMP 1406, ITEC 2400, ITEC 2401, SYSC 2004.

Prerequisite(s): COMP 1005 or COMP 1405.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1008 [0.5 credit]**Math for Game Programmers**

Math for building 3D games. Points, vectors, normals. Dot and cross products. Transformations and inverses in left- and right-handed systems. Uses for controlling objects, cameras, and texture manipulation. Bounding boxes, planes, frustums for collision detection and visibility, fast billboard techniques, point and sphere sweeping. Quaternions.

Prerequisite(s): one Grade 12 university preparation mathematics course.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1405 [0.5 credit]**Introduction to Computer Science I**

Introduction to computer science and programming, for computer science students. Topics include: algorithm design; control structures; variables and types; linear collections; functions; debugging and testing. Special attention is given to procedural programming in a modern language, computational thinking skills, and problem decomposition.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, CGSC 1005, COMP 1005, ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, ITEC 1400, ITEC 1401, SYSC 1005.

Prerequisite(s): restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1406 [0.5 credit]**Introduction to Computer Science II**

A second course in programming for BCS students, emphasizing problem solving and computational thinking in an object-oriented language. Topics include abstraction, mutable data structures, methods, inheritance, polymorphism, recursion, program efficiency, testing and debugging.

Precludes additional credit for BIT 2400, BUSI 2402, COMP 1006, ITEC 2400, ITEC 2401, SYSC 2004.

Prerequisite(s): COMP 1005 or COMP 1405. Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics. Lectures three hours a week, tutorial one and a half hours a week.

COMP 1501 [0.5 credit]**Introduction to Computer Game Design**

Introduction to game design and prototyping. Topics include: formal theories of fun; the mechanics-dynamics-aesthetics framework; game economies; game balance; statistical tools for analyzing game mechanics; game settings; and storytelling. Special attention is given to the attributes of games and what makes a game fun.

Prerequisite(s): COMP 1005 or COMP 1405.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 1601 [0.5 credit]**Introduction to Mobile Application Development**

Introduction to developing mobile applications using the Mac OS X platform. Topics include: the Objective-C programming language; development tools; framework API's; and the Quartz graphic system. Extensive practical experience with development for Apple mobile devices such as the iPhone.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1005 or COMP 1405.

Lecture/lab four hours a week.

COMP 1805 [0.5 credit]**Discrete Structures I**

Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing.

Includes: Experiential Learning Activity

Precludes additional credit for MATH 1800.

Prerequisite(s): one Grade 12 university preparation mathematics course.

Lectures three hours a week, tutorial one hour a week.

COMP 1910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. This course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): Permission of the School and registration in internship option.

COMP 1911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the BCS.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1910 and registration in internship option.

COMP 2109 [0.5 credit]**Introduction to Security and Privacy**

A tour of Internet security and privacy. Societal impacts and case studies. Topics from: protection goals of stakeholders; history of public key cryptography; programming languages and security; security engineering and testing; cybercrime and malware; Internet privacy and anonymity; government surveillance; regulation; ethics; blockchain applications.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1406 with a minimum grade of C-, and COMP 2401 with a minimum grade of C-.

Lectures three hours a week.

COMP 2401 [0.5 credit]**Introduction to Systems Programming**

Introduction to system-level programming with fundamental OS concepts, procedures, primitive data types, user-defined types. Topics may include process management, memory management, process coordination and synchronization, inter-process communication, file systems, networking, pointers, heap and stack memory management, and system/library calls.

Precludes additional credit for SYSC 2006.

Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 2402 [0.5 credit]**Abstract Data Types and Algorithms**

Introduction to the design and implementation of abstract data types and to complexity analysis of data structures.

Topics include: stacks, queues, lists, trees and graphs.

Special attention is given to abstraction, interface specification and hierarchical design using an object-oriented programming language.

Precludes additional credit for SYSC 2100.

Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.

Lectures three hours a week.

COMP 2404 [0.5 credit]**Introduction to Software Engineering**

Introduction to object-oriented software development, with emphasis on the design and implementation of maintainable, reusable software. Topics include abstraction, modularity, encapsulation, and an introduction to design patterns.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3010, SYSC 3110.

Prerequisite(s): COMP 2401 with a minimum grade of C-.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 2406 [0.5 credit]**Fundamentals of Web Applications**

Introduction to Internet application development; emphasis on computer science fundamentals of technologies underlying web applications. Topics include: scripting and functional languages, language-based virtual machines, database query languages, remote procedure calls over the Internet, and performance and security concerns in modern distributed applications.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4504.

Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.

Lectures three hours a week and tutorial one and a half hours a week.

COMP 2501 [0.5 credit]**Computer Game Design and Development**

Introduction to the practical development of computer games and engine architecture. Topics include: vector and matrix operations; coordinate systems and transformations; physical simulation; collision detection; AI; path planning; hardware-accelerated real-time rendering. Special attention is given to implementation of real-time rendering in a low-level language.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1501, COMP 2401 with a minimum grade of C-, and MATH 1104.

Lectures three hours a week, tutorial one and a half hours a week.

COMP 2601 [0.5 credit]**Mobile Applications**

Development of applications for mobile environments taking advantage of gesture-based input and using location and presence services. Topics include introduction to low-level network services and mobile platforms, description of architectural patterns, principles of mobile development and interaction styles for network service usage.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1601.

Lecture/lab four hours a week.

COMP 2801 [0.5 credit]**Introduction to Robotics**

A course on programming simulated mobile robots with various sensors such as wheel encoders, distance sensors, cameras, compasses, accelerometers, and laser range finders. Topics include: programming robot behaviour; performing position estimation; implementing algorithms related to navigation, mapping, path planning, area coverage, and localization.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 1807 (no longer offered).

Prerequisite(s): (COMP 1006 or COMP 1406 or SYSC 2004) with a minimum grade of C-.

Lab four hours a week.

COMP 2804 [0.5 credit]**Discrete Structures II**

A second course in discrete mathematics and discrete structures. Topics include: counting, sequences and sums, discrete probability, basic statistics, recurrence relations, randomized algorithms. Material is illustrated through examples from computing.

Prerequisite(s): COMP 1805 with a minimum grade of C-, or permission of the School of Computer Science for those in Combined Honours in Computer Science and Mathematics.

Lectures three hours a week.

COMP 2910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1911 and registration in internship option.

COMP 2911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the BCS.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 2910 and registration in internship option.

COMP 3000 [0.5 credit]**Operating Systems**

Operating system implementation course stressing fundamental issues in design and how they relate to modern computer architectures. Assignments involve the modification and extension of a multitasking operating system.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4001.

Prerequisite(s): COMP 2401 with a minimum grade of C- and (COMP 2402 or SYSC 2100).

Lectures three hours a week, tutorial one and a half hours a week.

COMP 3002 [0.5 credit]**Compiler Construction**

The structure, organization and design of the phases of a compiler are considered: lexical translators, syntactical translators, scope handlers, type checkers, code generators and optimizers. Components of a compiler will be implemented.

Prerequisite(s): (COMP 2402 or SYSC 2100).

Lectures three hours a week.

COMP 3004 [0.5 credit]**Object-Oriented Software Engineering**

Development of object-oriented software systems: theory and practice. Topics include: Computer ethics, software development processes, requirement specification, class and scenario modeling, state modeling, UML, design patterns, traceability. Students are to complete a team project.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3020, SYSC 3120, SYSC 4120.

Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2404 or SYSC 3010 or SYSC 3110) with a minimum grade of C-, and (COMP 2406 or SYSC 4504).

Lectures three hours a week.

COMP 3005 [0.5 credit]**Database Management Systems**

Introduces students to concepts of database management systems, database design and file structures. Topics include: entity-relationship modeling and object oriented database design, data models (relational, network and object oriented), the relational algebra, SQL, normalization theory, physical data organization, object oriented databases and OQL.

Precludes additional credit for BUSI 3400.

Prerequisite(s): COMP 1805 with a minimum grade of C-, and either COMP 2402 or (SYSC 2004 and SYSC 2100).

Lectures three hours a week.

COMP 3007 [0.5 credit]**Programming Paradigms**

An introduction to alternative programming paradigms such as functional, constraint-based, concurrent, and logic programming.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3101.

Prerequisite(s): COMP 1805 with a minimum grade of C-, and either COMP 2402 or (SYSC 2004 and SYSC 2100).

Lectures three hours a week.

COMP 3008 [0.5 credit]**Human-Computer Interaction**

Fundamentals of the underlying theories, design principles, development and evaluation practices of human-computer interaction (HCI). Topics may include: theories of interaction, user interface frameworks, desktop, web, mobile, and immersive applications, usability inspection and testing methods, and qualitative and quantitative approaches to HCI research.

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504).

Lectures three hours a week.

COMP 3009 [0.5 credit]**Computer Graphics**

An overview of computer graphics covering rendering, modeling, and animation. Topics include geometric primitives and modeling; image formation algorithms such as ray tracing and the Z-buffer; lighting, shading, and texture; and introduction to physics-based animation and character animation.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 2401 with a minimum grade of C-, (COMP 2402 or SYSC 2100), MATH 1007, and MATH 1104.

Lectures/lab four hours a week.

COMP 3105 [0.5 credit]**Introduction to Machine Learning**

An introduction to methods for automated learning of relationships on the basis of empirical data. Includes topics in supervised and unsupervised machine learning and deeper knowledge of several algorithms of each type and their applications. Evaluation and quantification of performance of ML systems.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4105 (no longer offered), SYSC 4415.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (2404 or SYSC 3010 or SYSC 3110) and COMP 2804 and (MATH 1104 or MATH 1107).

Lectures three hours a week.

COMP 3106 [0.5 credit]**Introduction to Artificial Intelligence**

Principles and tools used in Artificial Intelligence. Fundamentals of Knowledge Representation and Reinforcement Learning and Nature-Based computing. Methods for non-adversarial problem solving including non-exhaustive and heuristic-based strategies for searching the state space. Methods for adversarial problem solving, modeled as two-person and multi-person games.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4106 (no longer offered).

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.

Lectures three hours a week.

COMP 3109 [0.5 credit]**Applied Cryptography and Authentication**

Practical aspects of cryptography. Topics include: stream and block ciphers; modes of operation; hash functions; message and user authentication; authenticated key establishment protocols; random number generation; entropy; proof of knowledge; secret sharing; key distribution; pitfalls deploying public-key encryption and digital signatures.

Precludes additional credit for COMP 4109 (no longer offered).

Prerequisite(s): (COMP 2402 or SYSC 2100) and COMP 2804.

Lectures three hours a week.

COMP 3203 [0.5 credit]**Principles of Computer Networks**

This is an introductory course to the field of Network Computing. Topics include: Protocol Architectures and Internetworking, Types of Networks, Communication Protocols, End-System and Network Traffic Management, Structure of Routing and Congestion Control.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4602.

Prerequisite(s): COMP 2401 with a minimum grade of C-, and (COMP 2402 or SYSC 2100).

Lectures three hours a week.

COMP 3301 [0.5 credit]**Technical Writing for Computer Science**

Technical communication for computer science majors, concentrating on writing scientific papers and technical reports. Principles of clarity and precision in writing and communication. Practical exercises and readings from recent technical publications will be used.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110).

Lectures three hours a week.

COMP 3308 [0.5 credit]**Bioinformatics**

This practical interdisciplinary course will provide a broad overview of bioinformatics in which computer science and mathematics are applied to solve problems in molecular biology. Topics include gene prediction, sequence alignment, phylogeny, molecular interactions, macromolecular structure prediction and biological databases.

Includes: Experiential Learning Activity

Also listed as BIOC 3008 and BIOL 3008.

Prerequisite(s): BIOC 2200 or BIOL 2200, or BIOL 2201, or permission of the Biochemistry Institute.

Lecture two hours a week, computer workshop three hours a week.

COMP 3400 [0.5 credit]**Computational Logic and Automated Reasoning**

Applications of formal logic in computer science. Symbolic logics such as classical predicate calculus are used to represent domain knowledge, to model computational problems and to solve them by means of automated reasoners. Applications include artificial intelligence, software engineering, data management and hardware verification.

Prerequisite(s): COMP 2804.

Lectures three hours a week.

COMP 3501 [0.5 credit]**Foundations of Game Programming and Computer Graphics**

The theory and practice of 3D graphics for computer games. Topics include: vectors and quaternions; hierarchical transformations; camera and perspective; hardware-accelerated real-time rendering; texture and texture mapping; illumination; and particle systems. Additional topics may include rigid-body motion, character animation, shadows, and screen-space special effects.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and

COMP 2501.

Lectures three hours a week.

COMP 3801 [0.5 credit]**Algorithms for Modern Data Sets**

Algorithm design techniques for modern data sets arising in, for example, data mining, web analytics, epidemic spreads, search engines and social networks. Topics may include: data mining, hashing, streaming, clustering, recommendation systems, link analysis, dimensionality reduction, online, social networking, game theoretic and probabilistic algorithms.

Prerequisite(s): COMP 2804 with a minimum grade of B+. Lecture three hours a week.

COMP 3803 [0.5 credit]**Introduction to Theory of Computation**

Theoretical aspects of computer science. Topics include: formal languages and automata theory, computability theory.

Precludes additional credit for COMP 2805 (no longer offered).

Prerequisite(s): COMP 2804.

Lectures three hours a week.

COMP 3804 [0.5 credit]**Design and Analysis of Algorithms I**

An introduction to the design and analysis of algorithms. Topics include: divide-and-conquer, dynamic programming, linear programming, greedy algorithms, graph algorithms, NP-completeness.

Also listed as MATH 3804.

Prerequisite(s): (COMP 2402 or SYSC 2100) and either COMP 2804 or (MATH 2007 and MATH 2108).

Lectures and tutorials three to four and a half hours a week.

COMP 3805 [0.5 credit]**Discrete Structures and Applications (Honours)**

Enumeration: inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes. Designs and finite geometries. Symmetry and counting.

Also listed as MATH 3855.

Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.

Prerequisite(s): MATH 2100 or a grade of B or higher in MATH 2108 or MATH 3101.

Lectures three hours a week and one hour tutorial.

COMP 3807 [0.5 credit]**Mathematical Software**

Incorporation of basic numerical methods into efficient, reliable software. The course includes examination of existing software systems, e.g. linear systems, non-linear systems, optimization, or differential equations.

Includes: Experiential Learning Activity

Also listed as MATH 3807.

Prerequisite(s): A grade of C- or higher in COMP 3806 or MATH 3806.

COMP 3910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 2911 and registration in internship option.

COMP 3911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3910 and registration in internship option.

COMP 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

COMP 4000 [0.5 credit]**Distributed Operating Systems**

An advanced course emphasizing the principles of distributed operating systems including networking protocols, distributed file systems, remote IPC mechanisms, graphical user interfaces, load balancing, and process migration. Case studies include current "standards" as well as novel systems under development.

Includes: Experiential Learning Activity

Prerequisite(s): (COMP 3000 or SYSC 4001) and (COMP 3203 or SYSC 4602).

Lectures three hours a week.

COMP 4001 [0.5 credit]**Distributed Computing**

Overview of distributed computing. Topics include: computational models, communication complexity, design and analysis of distributed algorithms and protocols, fault-tolerant protocols, synchronous computations. Applications may include: communication in data networks, control in distributed system (e.g., election, distributed mutual exclusion), manipulation of distributed data (e.g., ranking).

Prerequisite(s): COMP 1805 with a minimum grade of C-, COMP 2401 with a minimum grade of C-, and (COMP 2406 or SYSC 4504).

Lectures three hours a week.

COMP 4002 [0.5 credit]**Real-Time 3D Game Engines**

The design and implementation of game engines for real-time 3D games including topics such as camera control, environmental effects, articulated models, terrain, vegetation, collision detection, particles, emitters, triggers, portals, waypoints, mirrors, and shadows.

Prerequisite(s): COMP 2404 or SYSC 3010 or SYSC 3110.

Lectures three hours a week.

COMP 4003 [0.5 credit]**Transaction Processing Systems**

Concepts and architectures of transaction processing systems and on-line transaction processing, with emphasis on data integration systems. Transaction properties and models, embedded-SQL, active rules, consistency maintenance, serializability, concurrency control, recovery, data integration systems and federated databases, introduction to transactions in web services and workflow systems.

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 3005.

Lectures three hours a week.

COMP 4004 [0.5 credit]**Software Quality Assurance**

Introduction to the theory and practice of Software Quality Assurance. Topics include: equivalence partitioning, test-driven testing, unit testing patterns, refactoring, software metrics, requirements engineering, scenario modeling and acceptance testing, model-based testing, state machine testing, software testing theory and tools.

Precludes additional credit for SYSC 4101.

Prerequisite(s): COMP 3004.

Lectures three hours a week.

COMP 4009 [0.5 credit]**Programming for Clusters and Multi-Core Processors**

Introduction to parallel architectures, programming languages and algorithms for processor clusters and multi-core processors. Distributed memory architectures, cluster computing, message passing parallel programming, multi-core processors, shared memory parallel programming, use of thread libraries, parallel performance analysis.

Prerequisite(s): (COMP 2402 or SYSC 2100) and (COMP 2404 or SYSC 3010 or SYSC 3110) and COMP 2804.

Lectures three hours a week.

COMP 4102 [0.5 credit]**Computer Vision**

The basic ideas and techniques of computer vision.

The central theme is reconstructing 3D models from 2D images. Topics include: image formation, image feature extraction, camera models, camera calibration, structure from motion, stereo, recognition, augmented reality, image searching.

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (MATH 1104 or MATH 1107).

Lectures three hours a week.

COMP 4107 [0.5 credit]**Neural Networks**

An introduction to neural networks and deep learning. Theory and application of Neural Networks to problems in machine learning. Various network architectures will be discussed. Methods for improving optimization and generalization of neural networks. Neural networks for unsupervised learning.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 5206.

Prerequisite(s): COMP 3105 and (MATH 1104 or MATH 1107).

Lectures three hours a week.

COMP 4108 [0.5 credit]**Computer Systems Security**

Information security in computer and communications systems. Topics include: design principles; operating system security and access control; web and software security; malicious software, security infrastructure; secure email; network authentication; firewalls; intrusion detection; IP security; network attacks; wireless security.

Precludes additional credit for SYSC 4810.

Prerequisite(s): (COMP 3000 or SYSC 4001) and COMP 3109.

Lectures three hours a week.

COMP 4111 [0.5 credit]**Data Management for Business Intelligence**

Application of computational techniques to support business activities, such as decision making, business understanding, data analysis, business process automation, learning from data, producing and using data-centric business models, ontology-based data access and integration, data quality assessment and cleaning and use of contextual data.

Prerequisite(s): COMP 3005.

Also offered at the graduate level, with different requirements, as COMP 5111, for which additional credit is precluded.

Lectures three hours a week.

COMP 4202 [0.5 credit]**Computational Aspects of Geographic Information Systems**

Through recent advances in navigation systems, mobile devices, and new software such as Mapquest and Google Earth, GIS is becoming increasingly important and exciting from a CS perspective. This course lays the algorithmic foundations to understand, use and further this technology.

Prerequisite(s): COMP 3804 or MATH 3804.

Also offered at the graduate level, with different requirements, as COMP 5204, for which additional credit is precluded.

Lecture three hours a week.

COMP 4203 [0.5 credit]**Wireless Networks and Security**

An introduction to wireless networks covering both networking issues and security aspects of modern wireless environments. Fundamentals of mobile LANs, ad hoc, sensor networks, secure routing, searching, clustering, multicasting, localization, mobile IP/TCP, confidentiality, key establishment, authentication, broadcasting, RFIDs, and rogue attacks.

Prerequisite(s): COMP 3203 or SYSC 4602.

Lectures three hours a week.

COMP 4206 [0.5 credit]**Evolving Information Networks**

Convergence of social and technological networks. Interplay between information content, entities creating it and technologies supporting it. Structure and analysis of such networks, models abstracting their properties, techniques link analysis, search, mechanism design, power laws, cascading, clustering and connections with work in social sciences.

Prerequisite(s): COMP 1805, (COMP 2401 with a minimum grade of C-) and (COMP 2406 or SYSC 4504).

Also offered at the graduate level, with different requirements, as COMP 5310, for which additional credit is precluded.

Lecture three hours a week.

COMP 4308 [0.5 credit]**Computational Systems Biology**

Modeling and simulation of metabolic and regulatory networks towards understanding complex and highly dynamic cellular systems. Biotechnological applications include metabolic engineering, synthetic biology, and drug discovery.

Includes: Experiential Learning Activity

Also listed as BIOC 4008.

Prerequisite(s): BIOC 3101 or permission of the Biochemistry Institute.

Lecture one and a half hours per week, workshop one and a half hours per week.

COMP 4501 [0.5 credit]**Advanced Facilities for Real-Time Games**

A practical course on the design and implementation of modern game engines and advanced facilities provided by these engines. Such facilities include systems for rendering 3D scenes; simulating physics; playing animations; game AI; and enabling multi-player games. Students will undertake a significant game development project.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3501.

Lectures three hours a week.

COMP 4601 [0.5 credit]**Intelligent Web-based Information Systems**

Introduction to the principles and practice of creation, delivery and analysis of multimedia content in web-based systems. Topics include analysis of webs of documents, social network analysis, recommender systems and problems of trust, reputation and influence in e-commerce systems.

Includes: Experiential Learning Activity

Prerequisite(s): (COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or COMP 2601 or SYSC 4504).

Lecture/lab four hours a week.

COMP 4602 [0.5 credit]**Social Networking**

Introduction to virtual communities, overlay networks and social networking. Topics include architectural principles for heterogeneous social networking platforms, trust and reputation as social concepts, agent-based computing, and extraction of trends and patterns from information exchanged between community members.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3601 (no longer offered).

Prerequisite(s): ((COMP 2404 or SYSC 3010 or SYSC 3110) and (COMP 2406 or SYSC 4504)) or COMP 2601.

Lectures/labs four hours per week.

COMP 4701 [0.5 credit]**Computing, Society, and Ethics**

This course examines ethical questions raised by computing technologies - both motivated by recent developments and through the lens of fiction. Students will identify possible ethical issues in future technologies and use formal ethics frameworks to evaluate the merits and pitfalls of different solutions.

Includes: Experiential Learning Activity

Prerequisite(s): Any two of the following: COMP 3004, COMP 3005, COMP 3008, COMP 3105, COMP 3106, COMP 3109, COMP 3308, COMP 3804.

Lectures three hours a week.

COMP 4803 [0.5 credit]**Computable Functions**

Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness.

Also listed as MATH 4803.

Prerequisite(s): MATH 2100 or COMP 3805 or permission of the School.

COMP 4804 [0.5 credit]**Design and Analysis of Algorithms II**

A second course on the design and analysis of algorithms. Topics include: advanced recurrence relations, algebraic complexity, advanced graph algorithms, amortized analysis, algorithms for NP-complete problems, randomized algorithms.

Prerequisite(s): COMP 3804 or MATH 3804.

Lectures three hours a week.

COMP 4805 [0.5 credit]**Theory of Automata**

Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems.

Also listed as MATH 4805.

Precludes additional credit for MATH 5605.

Prerequisite(s): COMP 3805 or MATH 3106 or MATH 3158 (or MATH 3100) or permission of the School.

Lectures three hours a week.

COMP 4806 [0.5 credit]**Numerical Linear Algebra**

Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas.

Also listed as MATH 4806.

Prerequisite(s): MATH 2152 or MATH 1102 (no longer offered) or MATH 2107; and MATH 2000 and COMP 3806, or permission of the School.

Lectures three hours a week.

COMP 4900 [0.5 credit]**Advanced Topics in Computer Science**

Selected topics in Computer Science offered by members of the School of Computer Science.

Prerequisite(s): permission of the School of Computer Science.

Lectures three hours a week and up to three hours of tutorials a week.

COMP 4901 [0.5 credit]**Directed Studies**

Independent study under the supervision of a member of the School of Computer Science, open only to students in the B.C.S. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to two such courses in their program.

Prerequisite(s): permission of the School of Computer Science.

COMP 4905 [0.5 credit]**Honours Project**

Under the supervision of a faculty member, Honours students complete a major Computer Science project in fourth year. Permission to register is granted once an approved project proposal is submitted to the Department. See deadlines and details on the School web site.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4906.

Prerequisite(s): registration in the B.C.S. Honours program or one of the Combined Computer Science Honours programs and permission of the School of Computer Science.

COMP 4906 [1.0 credit]**Honours Thesis**

An independent research project under the direct supervision of a faculty advisor. Permission to register is granted once an approved project proposal is submitted to the School of Computer Science. Evaluation is based on a written thesis and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4905.

Prerequisite(s): fourth-year standing in a B.C.S. Honours program with a minimum CGPA of 9.0 in the major and permission of the School of Computer Science.

COMP 4910 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3911 and registration in internship option.

COMP 4911 [0.5 credit]**Internship**

The internship exposes students to industrial software development via placement in a local enterprise. The course may only be taken by students participating in one of the School's industrial partnerships and can only be used as a free elective in the B.C.S.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 4910 and registration in internship option.

Criminology and Criminal Justice (CRCJ)

Criminology and Criminal Justice (CRCJ) Courses

CRCJ 1000 [0.5 credit]

Introduction to Criminology and Criminal Justice

Overview of the field, including the foundational approaches of criminology and criminal justice, crime as an object of study; criminal law and criminality in Canada; (neo) classical, aetiological and social reaction perspectives; alternative criminologies.

Lectures/tutorials three hours a week.

CRCJ 2100 [0.5 credit]

Criminological Theories

Comprehensive survey of the plurality of criminological theories, from phrenology to contemporary theories concerned with issues related to crime and punishment. Students are encouraged to develop critical and reflexive thinking on various criminological issues and theories.

Prerequisite(s): CRCJ 1000 and second-year standing. Lectures three hours per week.

CRCJ 2200 [0.5 credit]

Contemporary Issues in Criminology & Criminal Justice

Survey of contemporary criminological and criminal justice issues, ranging from criminalization, crime prevention, and surveillance strategies to debates about the criminal justice system, punishment, and reintegration. Specific topics will vary from year to year.

Prerequisite(s): CRCJ 1000 and second-year standing. Lecture three hours per week.

CRCJ 3001 [0.5 credit]

Quantitative Methods in Criminology

Methods used conducting quantitative research. Topics include measuring and manipulating variables, reliability, validity, sampling, experimental, quasi-experimental designs and ethics.

Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice. Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3002 [0.5 credit]

Qualitative Methods in Criminology

Methods used conducting qualitative research. Topics include field research, interviewing, ethnographic research, content analysis and ethics.

Includes: Experiential Learning Activity

Prerequisite(s): CRCJ 1000 and third-year standing in the B.A Honours program in Criminology and Criminal Justice. Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3100 [0.5 credit]

Policing (in)Security

Theories and case studies addressing contemporary efforts to police the world of (in)securities. Emphasis on Canadian dynamics within these broader transformations. Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lecture and discussion three hours per week.

CRCJ 3110 [0.5 credit]

Policing and Public Health

This interdisciplinary course introduces students to myriad ways in which the practices of Canadian public health authorities are intertwined with police and the criminal legal system. Students can expect interactive class activities and guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lecture and discussion three hours per week.

CRCJ 3200 [0.5 credit]

Indigeneity, Coloniality, and Crime

This course explores issues related to Indigenous peoples, the criminal justice system and community with an emphasis on Indigenous scholarship and perspectives on criminology and crime.

Prerequisite(s): CRCJ 1000, INDG 1010, or INDG 1011, third year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lecture and discussion three hours per week.

CRCJ 3201 [0.5 credit]

Special Criminological Topics

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lectures three hours per week.

CRCJ 3202 [0.5 credit]

Special Criminological Topics

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): CRCJ 1000, third-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Lectures three hours per week.

CRCJ 3901 [1.0 credit]**Practicum in Criminology I**

Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3901 may not be repeated.

Includes: Experiential Learning Activity

Prerequisite(s): Third-year standing in a B.A. in Criminology and Criminal Justice, including all of the 1000- and 2000- level requirements in the Major CGPA, and permission of the Institute.

Field placement eight hours a week, seminar three hours a week.

CRCJ 3902 [1.0 credit]**Practicum in Criminology II**

Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. In the seminar class, discussions, presentations and assignments integrate applied, theoretical and empirical knowledge. CRCJ 3902 may not be repeated.

Includes: Experiential Learning Activity

Prerequisite(s): Third-year Honours standing in Criminology and Criminal Justice, including all of the 1000- and 2000- level requirements in the Major CGPA, and permission of the Institute.

Field placement eight hours a week, seminar three hours a week.

CRCJ 4001 [0.5 credit]**Special Topics in Criminology**

Examination of a special topic in criminology. Topics to be announced in advance of registration each year.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4002 [0.5 credit]**Special Topics in Criminology**

Examination of a special topic in criminology. Topics to be announced in advance of registration each year.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4100 [0.5 credit]**Psychology of the Jury**

This course will explore the jury system in Canada and other countries. Jury selection, deliberation, and instructions will be discussed, in addition to a number of legal and extra-legal influences on jury decision-making.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4110 [0.5 credit]**Race and the Criminal Justice System in Canada**

A participatory class that explores debates regarding issues of racial bias and systemic racism in the Canadian criminal justice system. Students can expect class activities, documentary viewings, and guest lecturers from the field.

Prerequisite(s): CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4200 [0.5 credit]**Policing Sex**

This seminar explores the policing of consensual sexual practices, paying particular attention to the theorization of consent, harm, liberation and agency in a sexual and legal context.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4300 [0.5 credit]**Social Control**

Introduction to social control from early theorizations linking social control to the genesis of the self, to preoccupations with the sorting of humans and the guiding of their conducts, including contemporary engagements with moralization, penal intensification, sovereign exceptionality, and immigration control.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4400 [0.5 credit]**Crime, Emotions, and The Senses**

This course examines the relationship between sensations, emotions, affect, crime, criminalization, social control, and penalty. It questions the rational/emotional binary and investigates how shame, humiliation, fear, panic, pain, pleasure, disgust, empathy and revenge, relate to offender motivation, criminalization, victimization, adjudication, and punishment.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4500 [0.5 credit]**Art of (in)Justice**

A participatory class that explores how social and artist movements engage with issues of justice and injustice. Features group work, some off-campus classes during course hours, guest speakers.

Includes: Experiential Learning Activity

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute.

Seminar three hours per week.

CRCJ 4600 [0.5 credit]**Sociologies of Punishment**

This introductory seminar on the sociology of punishment proposes an overview of theoretical perspectives animating its contemporary forms. This overview prepares the ground for a survey of contemporary scholarship and issues in the sociology of punishment.

Prerequisite(s): CRCJ 1000, CRCJ 2100, fourth-year standing, and enrollment in a B.A. or Minor in Criminology and Criminal Justice, or by permission of the Institute. Seminar three hours per week.

CRCJ 4908 [1.0 credit]**Honours Thesis**

A research project conducted under the direct supervision of a faculty adviser from Criminology and Criminal Justice, Psychology, Law or Sociology. Mandatory workshops and symposiums are scheduled during the year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.A. Honours program in Criminology and Criminal Justice with a CGPA of 10.00 or better in the Major and permission of the Institute.

Workshops and symposiums as scheduled.

CRCJ 4910 [0.5 credit]**Independent Study in Criminology and Criminal Justice**

A reading or research course conducted under the supervision of a faculty advisor from Criminology and Criminal Justice, Psychology, Law or Sociology. Students may not include more than 1.0 credit of independent study in their total program.

Prerequisite(s): fourth-year standing in the B.A. Honours program in Criminology and Criminal Justice and permission of the Institute.

CRCJ 4920 [0.5 credit]**Independent Study in Criminology and Criminal Justice**

A reading or research course conducted under the supervision of a faculty advisor from Criminology and Criminal Justice, Psychology, Law or Sociology. Students may not include more than 1.0 credit of independent study in their total program.

Prerequisite(s): fourth-year standing in the B.A. Honours program in Criminology and Criminal Justice and permission of the Institute.

Critical Race Studies (CRST)

Critical Race Studies (CRST) Courses**CRST 2001 [0.5 credit]****Introduction to Critical Race Studies**

Foundations and central tenets of critical race theory, its interdisciplinary debates, applications, and evolutions. Historical roots of oppression, white settler-colonialism, understanding of privilege and power, social construction of race, socio-political conditions producing systemic and institutional racism, intersections with sexism, homophobia, transphobia, classism, and ableism.

Includes: Experiential Learning Activity

Prerequisite(s): Second year standing.

Lectures and discussion three hours a week.

CRST 3812 [0.5 credit]**Interdisciplinary Topics in Critical Race Studies**

An interdisciplinary analysis of one or more topics in critical race studies. The topics of this course will vary from year to year and are announced in advance of registration.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing and WGST 1808 or FYSM 1402 or permission of the Institute of Women's and Gender Studies.

Lectures three hours per week. This course is repeatable when the topic changes.

CRST 4001 [0.5 credit]**Advanced Critical Race Studies**

Interdisciplinary seminar on race, colonialism and feminisms including theories of racial and cultural difference, structures of privilege and power, and forms of resistance. Intersectional theoretical approaches to anti-colonial and feminist analyses of racial subjugation, and engagements with Black, Indigenous and women of colour feminisms.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.

Seminar three hours per week.

Digital Humanities (DIGH)

Digital Humanities (DIGH) Courses**DIGH 2001 [0.5 credit]****Introduction to Digital Humanities**

An introduction to the principal debates in and approaches to the Digital Humanities.

Also listed as ENGL 2400.

Prerequisite(s): second-year standing or permission of the College of Humanities.

Lecture three hours a week.

DIGH 2002 [0.5 credit]**Digital Humanities: Theory and Method**

A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects.

Includes: Experiential Learning Activity

Also listed as ENGL 2401.

Prerequisite(s): second-year standing or permission of the College of Humanities.

Lecture and workshop three hours a week.

DIGH 2035 [0.5 credit]**Technology, Culture and Society**

Principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.

Also listed as SOCI 2035.

Precludes additional credit for SOCI 2400.

Prerequisite(s): SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.

Lectures/discussion groups three hours a week.

DIGH 2700 [0.5 credit]**Special Topics in Digital Humanities**

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Lecture 3 hours per week.

DIGH 2705 [0.5 credit]**Popular Culture in the Digital Age**

An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.

Also listed as SOCI 2705.

Prerequisite(s): SOCI 1001 and SOCI 1002, or ANTH 1001 or ANTH 1002.

Lecture/discussion groups three hours a week.

DIGH 3001 [0.5 credit]**The Book in the Digital Age**

A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms.

Also listed as ENGL 3401.

Prerequisite(s): third-year standing, or permission of the College of Humanities.

Lecture three hours a week.

DIGH 3035 [0.5 credit]**Science, Culture and Society: Social Studies of Science**

Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.

Also listed as SOCI 3035, ANTH 3035.

Prerequisite(s): DIGH 2035 or SOCI 2035 and third-year standing.

Lecture three hours a week.

DIGH 3700 [0.5 credit]**Special Topics in Digital Humanities**

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Lecture 3 hours per week.

DIGH 3704 [0.5 credit]**Cognitive Science and the Digital Humanities**

Exploration of the roles of human and artificial cognition in the digital humanities. Topics may include virtual and augmented reality as applied to the humanities, cognitive issues in hypertext and hypermedia; linguistic and philosophical considerations in digital media, cognitive narratology, and artificial intelligence.

Also listed as CGSC 3704.

Prerequisite(s): CGSC 1001; CGSC 2001 or DIGH 2001; and third-year standing.

Seminar three hours per week.

DIGH 3812 [0.5 credit]**Digital History**

The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).

Includes: Experiential Learning Activity

Also listed as HIST 3812.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lecture three hours a week.

DIGH 3814 [0.5 credit]**Crafting Digital History**

This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).

Includes: Experiential Learning Activity

Also listed as HIST 3814.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

DIGH 4001 [0.5 credit]**Studies in Digital Humanities**

A study of current issues and debates in Digital Humanities.

Also listed as ENGL 4155.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Seminar or lecture three hours a week.

DIGH 4002 [0.5 credit]**Digital Culture and the Text I**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as ENGL 4125.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Seminar or lecture three hours a week.

DIGH 4003 [0.5 credit]**Digital Culture and the Text II**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as ENGL 4145.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Seminar or lecture three hours a week.

DIGH 4004 [0.5 credit]**Digital Humanities Workshop**

This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.

Includes: Experiential Learning Activity

Also listed as ENGL 4404.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Workshop three hours a week.

DIGH 4005 [0.5 credit]**Digital Humanities Practicum**

Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.

Includes: Experiential Learning Activity

Also listed as ENGL 4405.

Prerequisite(s): DIGH 2002 and fourth-year standing, or permission of the College of Humanities.

Practicum.

Disability Studies (DBST)

Disability Studies (DBST) Courses**DBST 1001 [0.5 credit]****Introduction to Disability Studies**

Challenging negative stereotypes of disability by allowing students the opportunity to explore disability through many different venues including history, theory, culture, ethics, policy and disability rights. Reframing disability from personal tragedy to issues of oppression, access, inclusion and equality.

Lectures and discussion groups three hours per week.

DBST 2001 [0.5 credit]**Disabling Society**

Interdisciplinary approach to the debates and theories that challenge the normative values, knowledge sources, and cultural representations of disablement in society.

Prerequisite(s): Second-year standing.

Lecture and discussion three hours a week.

DBST 3001 [0.5 credit]**Disability Studies: Policy and Activism**

The complex legal, policy and discursive frameworks that shape the lives of persons with disability and the history of the emergence of the disability rights movement as a scholarly and activist challenge to, and renegotiation of, those frameworks.

Includes: Experiential Learning Activity

Precludes additional credit for DBST 4001 (no longer offered).

Prerequisite(s): third-year standing.

Lecture three hours a week.

DBST 3002 [0.5 credit]**Critical Mad Studies**

A critical examination of the psy-disciplines, sanist beliefs and practices, and dominant mental health discourses in Canada and globally through mad-identified people's experiences, stories, and scholarship.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing and WGST 1808 or FYSM 1402 or permission of the Institute of Women's and Gender Studies.

Lecture three hours per week.

DBST 3060 [0.5 credit]**Critical Disability Studies**

Course engages contemporary disability theory, culture, and activism to consider bodily difference and its relation to the workings of power and social control, accessibility, normalization, ableism, and medicalization. Students will gain an understanding of the contemporary debates, theories, and methodologies of critical disability studies. Also listed as SOCI 3060.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lectures three hours a week.

DBST 3301 [0.5 credit]**Introduction to Deaf Studies**

A critical introduction to Deaf community and culture as they relate to a social model of disability, to ethnicity, and to issues of diversity and inclusion. Discourse analysis of research and policy in education for Deaf students from early childhood and beyond.

Also listed as ALDS 3301.

Precludes additional credit for ALDS 3903A if taken in Winter term 2016 or Winter term 2018, and ALDS 4906A if taken in Fall term 2016.

Prerequisite(s): third-year standing in Linguistics or Applied Linguistics and Discourse Studies or enrolment in the Minor in Disability Studies.

Seminars three hours a week.

DBST 3304 [0.5 credit]**Disability and Childhood: Transnational Perspectives**

Drawing on theory and research in disabled children's childhood studies, sociology of childhood, disability studies, and girlhood studies, this course examines the discursive and material constructions of disabled youth and childhood in transnational contexts in relation to emerging neo-colonial, neo-imperialist, and neo-liberal ideologies.

Also listed as CHST 3304.

Prerequisite(s): third-year standing in Childhood and Youth Studies or Disability Studies.

Lecture three hours a week.

DBST 3812 [0.5 credit]**Interdisciplinary Topics in Disability Studies**

An interdisciplinary analysis of one or more topics in critical disability studies. The topics of this course will vary from year to year and are announced in advance of registration.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing and WGST 1808 or FYSM 1402 or permission of the Institute of Women's and Gender Studies.

Lectures three hours per week. This course is repeatable when the topic changes.

DBST 3900 [0.5 credit]**Independent Study**

Essays, discussions, and/or examinations based on a bibliography constructed by the student in consultation with an instructor.

Prerequisite(s): third or fourth-year standing in the Disability Studies Minor and a CGPA of 9.0 or higher.

DBST 4812 [0.5 credit]**Interdisciplinary Topics in Disability Studies**

An interdisciplinary analysis of one or more topics in critical disability studies.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth year standing and WGST 1808 or FYSM 1402 OR permission of the Institute of Women's and Gender Studies.

Seminar three hours per week. This course is repeatable when the topic changes.

Earth Sciences (ERTH)

Earth Sciences (ERTH) Courses**ERTH 1006 [0.5 credit]****Exploring Planet Earth**

Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 1001 (no longer offered), ERTH 1010, ERTH 2404.

Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are enrolled in the Faculty of Science.

Lectures three hours a week, a laboratory three hours a week, and a field excursion.

ERTH 1009 [0.5 credit]**The Earth System Through Time**

Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions, and the use of fossils for interpreting past ecosystems.

Includes: Experiential Learning Activity

Precludes additional credit for GEOL 1008 (no longer offered), ERTH 1011.

Prerequisite(s): This course is for students who are enrolled in the Faculty of Science.

Lectures three hours a week, a laboratory three hours a week.

ERTH 1010 [0.5 credit]**Our Dynamic Planet Earth**

Origin of the Earth, concepts of geological time, and exploration of the interaction and duration of geological processes that shape the surface to deep interior of our planet, the climate, and formation of rocks and earth resources.

Precludes additional credit for ERTH 1001 (no longer offered) and ERTH 1006.

Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended. This course is for students who are not enrolled in the Faculty of Science.

Lectures three hours a week.

ERTH 1011 [0.5 credit]**Evolution of the Earth**

Origin and co-evolution of Earth and life over its 4.56 billion year history. Connections between plate tectonics, rock formation, climate and global change. Early marine life, colonization of land, mass extinctions and the use of fossils for interpreting past ecosystems.

Precludes additional credit for GEOL 1008 (no longer offered) and EARTH 1009.

Prerequisite(s): a 4U/M level in Advanced Functions and at least one of Biology, Chemistry, Earth and Space Sciences or Physics are recommended; EARTH 1010 is normally taken prior to this course. This course is for students who are not enrolled in the Faculty of Science. Lectures three hours a week.

ERTH 2004 [0.5 credit]**Maps, Satellites and the Geospatial Revolution**

Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing).

Also listed as GEOM 1004.

Precludes additional credit for GEOM 2004 (no longer offered).

Lectures and laboratory, four hours a week.

ERTH 2012 [0.5 credit]**Planet Hollywood**

Earth Science concepts and content portrayed in Hollywood films are sometimes accurate but more frequently misrepresented. This course will examine popular Hollywood films to critically evaluate the Earth Science concepts and content that they present and directly compare them to the actual science.

Online modules, bi-weekly film screenings and discussions four hours per week.

ERTH 2102 [0.5 credit]**Mineralogy to Petrology**

Chemical, optical and crystallographic properties of common rock-forming minerals, with introduction to common mineral assemblages of igneous, sedimentary, and metamorphic rocks.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 3202 (no longer offered).

Prerequisite(s): EARTH 1006 and (ERTH 1009 or GEOG 2013) and (CHEM 1001 or CHEM 1005) and (CHEM 1002 or CHEM 1006) and (MATH 1004 or MATH 1007) and (MATH 1104 or MATH 1107).

Lectures two hours a week and laboratory three hours a week.

ERTH 2104 [0.5 credit]**Igneous Systems, Geochemistry and Processes**

The sources and magmatic evolution of volcanic and plutonic rocks systems, with emphasis on geochemical, mineralogical, and textural characteristics, and relations to igneous processes.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 3202 (no longer offered).

Prerequisite(s): (CHEM 1001 or CHEM 1005) and (CHEM 1002 or CHEM 1006), (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107) and EARTH 2102.

Lectures three hours a week, laboratory three hours a week and a field excursion.

ERTH 2105 [0.5 credit]**Geodynamics**

The structure, composition, and rheological properties of the Earth: lithosphere, mantle and core. Plate tectonics and its relation to geophysical fields, driving mechanisms, and processes at plate boundaries and in plate interiors.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 3805 (no longer offered).

Prerequisite(s): EARTH 1006 and (ERTH 1009 or GEOG 2013).

Lectures two hours a week and a laboratory three hours a week.

ERTH 2312 [0.5 credit]**Paleontology**

Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 2316, GEOL 2301 (no longer offered) and GEOL 2306 (no longer offered).

Prerequisite(s): EARTH 1006 and (ERTH 1009 or GEOG 2013).

Lectures two hours a week and a laboratory three hours a week.

ERTH 2314 [0.5 credit]**Sedimentation and Stratigraphy**

Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy; methods of correlation.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 2318.

Prerequisite(s): EARTH 1006 and (ERTH 1009 or GEOG 2013).

Lectures three hours a week and a laboratory three hours a week.

ERTH 2316 [0.5 credit]**Paleoecology**

Introduction to macrofossil and microfossil groups, their paleoenvironmental significance, and principles of evolutionary paleoecology.

Precludes additional credit for ERTH 2312. Not available for credit in B.Sc. Earth Sciences programs.

Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.

Lectures two hours a week.

ERTH 2318 [0.5 credit]**Sedimentology**

Origin of sediments and their transport, distribution, and primary structures; processes of sediment-to-rock transformation; spatial patterns; controls of stratigraphy and methods of correlation.

Precludes additional credit for ERTH 2314. Not available for credit in B.Sc. Earth Sciences programs.

Prerequisite(s): ERTH 1006 and ERTH 1009. Priority given to students in the Minor in Earth Sciences.

Lectures three hours a week.

ERTH 2401 [0.5 credit]**Dinosaurs**

A general introduction to dinosaurs, their place in evolution, their social behaviour, the Mesozoic landscape and extinction theories.

Lectures three hours a week.

ERTH 2402 [0.5 credit]**Climate Change: An Earth Sciences Perspective**

An exploration of the often dramatic climate changes that have occurred through earth history from a geological perspective, emphasizing the history of earth climates, geological causes of climate change and impact that rapid climate change has had on the biosphere.

Lectures three hours a week.

ERTH 2403 [0.5 credit]**Introduction to Oceanography**

An environmental approach to understanding the oceans; introducing the physical and biological aspects of oceanography, marine resources and marine pollution.

Precludes additional credit for ERTH 3206.

Lectures three hours per week.

ERTH 2404 [0.5 credit]**Engineering Geoscience**

Applications of the basic concepts of geology, earth materials and earth processes to practical engineering and environmental science. Topics include rock and soil mechanics, slope stability, hydrogeology, geological hazards, and site investigations. Overview of related geophysical methods.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 2414 (no longer offered) and ERTH 1006.

Prerequisite(s): completion of first year of any B.Eng. program.

Lectures three hours a week and a laboratory three hours a week.

ERTH 2406 [0.5 credit]**Geology and Map Interpretation**

Analysis and interpretation of geological features and processes using rocks, maps and cross sections.

Introduction to computational methods.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2102 and ERTH 2004.

Lectures two hours a week and a laboratory three hours a week.

ERTH 2415 [0.5 credit]**Natural Disasters**

Physical characteristics and causes of natural disasters of geological origin such as volcanic eruptions, earthquakes, tsunami, landslides, hurricanes and meteor impacts.

Discussion on historical perspective, societal impact and mitigation strategies. Emphasis on Canadian case histories.

Precludes additional credit for ERTH 1003 (no longer offered).

Prerequisite(s): second-year standing in any degree program. With the exception of the Minor in Earth Sciences, available as a free elective only in any B.Sc. program, including Earth Sciences.

Lectures three hours a week.

ERTH 2419 [0.5 credit]**On the Origin of Planets**

Origin and evolution of all planetary objects in the solar system. Topics include the geology of comets, asteroids, the terrestrial planets and rocky moons, Earth's formation and early evolution, ocean worlds, the search for exoplanets and detection of extraterrestrial life.

Lectures three hours a week.

ERTH 2802 [0.5 credit]**Field Geology I**

Field analysis using geological, geophysical and computational methods leading to the interpretation of the origins of geological features and processes.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2406 and permission of the department.

Field work for two weeks off campus. A supplementary fee will apply.

ERTH 3002 [0.5 credit]**Gemology**

Gemstones including their physical and chemical properties, geological formation and geographic occurrence. Introduction to gemological laboratory methods.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2102.

Lectures two hours a week and laboratory two hours a week.

ERTH 3003 [0.5 credit]**Geochemistry and Geochronology**

Geochemical composition of reservoirs from the deep Earth to surface environments. Use of geochemistry and isotope geochemistry to track geological processes. Introduction to a variety of scientific dating methods (geochronology).

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 2101 (no longer offered).

Prerequisite(s): ERTH 2102, ERTH 2104 and ERTH 2105.

Lecture three hours a week and a laboratory two hours a week.

ERTH 3111 [0.5 credit]**Vertebrate Evolution: Mammals, Reptiles, and Birds**

Evolution of mammals, reptiles and birds. Emphasis on surveying amniote diversity, and the origin of key amniote transformations, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as BIOL 3111.

Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

ERTH 3112 [0.5 credit]**Vertebrate Evolution: Fish and Amphibians**

Evolution of fish and amphibians. Emphasis on surveying fish and amphibian diversity, and the origin of key transformations of these groups, as evidenced by the fossil record.

Includes: Experiential Learning Activity

Also listed as BIOL 3112.

Prerequisite(s): ERTH 1009 or BIOL 2001, or permission of the department.

Lectures two hours a week and a laboratory three hours a week.

ERTH 3113 [0.5 credit]**Geology of Human Origins**

The origin and evolution of our species from geological, biological and cultural perspectives. The course traces human ancestry from our primate roots through time and changing environments, and explores controversies, frauds, and misperceptions.

Prerequisite(s): any 1000 or 2000 level Earth Sciences or Biology course.

Lectures three hours per week.

ERTH 3203 [0.5 credit]**Sedimentology**

A 10-day field study of modern and ancient sedimentary and ecological systems and their stratigraphy in a geological region outside of the Ottawa area. Subsequent in-class seminars examine significant changes in sedimentary environments through Earth's history. A supplementary fee will apply.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3201 (no longer offered).

Prerequisite(s): ERTH 2314, enrolment in one of the ERTH Honours, Combined Honours or Major programs, a 2000-level CGPA of 8.0 and permission of the Department.

Ten-day off-campus field course.

ERTH 3204 [0.5 credit]**Mineral Deposits**

Analysis and interpretation of the geological and geochemical processes responsible for mineral deposit genesis in a global context.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2104.

Lectures and laboratory five hours a week.

ERTH 3205 [0.5 credit]**Physical Hydrogeology**

Principles of deep- to shallow fluid flow within the Earth's crust, and introduction to the exploration, development and management of groundwater as a global resource.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 1006 and (ERTH 1009 or GEOG 2013).

Lecture three hours a week and a laboratory three hours a week.

ERTH 3206 [0.5 credit]**Sedimentary Depositional Systems**

Application of sedimentary facies in class and local field-based settings to interpret modern and ancient depositional environments and stratigraphic succession related to climatic and oceanographic influences.

Subsequent in-class seminars examine significant changes in sedimentary environments through Earth's history.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3208 (no longer offered).

Prerequisite(s): ERTH 2314.

Field and class based instruction, 6 hours a week.

ERTH 3207 [0.5 credit]**Metamorphic Petrology and Processes**

Genesis of metamorphic rocks as determined from field, petrographic and geochemical data.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3202 (no longer offered).

Prerequisite(s): ERTH 2104.

Lectures two hours a week, a laboratory three hours a week and a field excursion.

ERTH 3405 [0.5 credit]**Geophysical Methods**

An introduction to the tools of applied geophysics including seismology, electrical, magnetic, and gravitational surveying methods.

Includes: Experiential Learning Activity

Precludes additional credit for EARTH 2405 (no longer offered).

Prerequisite(s): EARTH 2105.

Lecture two hours a week and a laboratory three hours a week.

ERTH 3806 [0.5 credit]**Structural Geology**

Structures and deformational processes in a variety of crustal settings. Applications to geological engineering and mineral and petroleum exploration.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 2105 and EARTH 2406.

Lecture two hours a week and a laboratory three hours a week.

ERTH 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ERTH 4003 [0.5 credit]**Directed Studies in Geology**

One or more projects involving at least 15 days field and/or laboratory research, not related to thesis research.

Assessment based on written reports and an oral presentation. Expenses for long-distance travel are borne by the student.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences.

Schedule to be arranged.

ERTH 4004 [0.5 credit]**Special Topics in Earth Sciences**

Field, laboratory or literature research, not related to thesis research. Assessment based on written reports and an oral presentation. Expenses for travel are borne by the student.

Prerequisite(s): fourth-year standing in any B.Sc. Hons. or Combined Hons. program in Earth Sciences. Major CGPA 8.5 or higher at time of registration for the course.

Schedule to be arranged.

ERTH 4005 [0.5 credit]**Micropaleontology**

Paleoecological and biostratigraphic significance, and evolutionary history of marine and freshwater microorganisms.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 2312.

Lectures, seminars and/or laboratory five hours a week.

ERTH 4006 [0.5 credit]**Geobiology**

Exploration of the relationship between micro- and macro-evolutionary processes and the Earth's physical and chemical environment. Paleobiology and evolutionary ecology in the context of paleoceanography, paleolimnology and paleoclimatology. May include one or two weeks of field based instruction with costs borne by the student.

Prerequisite(s): EARTH 2312.

Field excursions in addition to lectures or seminars three hours a week.

ERTH 4007 [0.5 credit]**Evolutionary Developmental Paleobiology**

This course explores the mechanistic basis of organismic evolution from genetic, morphogenetic and epigenetic perspectives, within a phylogenetic context of living and extinct vertebrates.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 2312 or BIOL 2001, and BIOL 2104.

Lectures or seminars three hours per week.

ERTH 4107 [0.5 credit]**Geotechnical Mechanics**

Soil composition and soil classification. Soil properties, compaction, seepage and permeability. Concepts of pore water pressure, capillary pressure and hydraulic head. Principle of effective stress, stress-deformation and strength characteristics of soils, consolidation, stress distribution with soils, and settlement. Laboratory testing.

Includes: Experiential Learning Activity

Also listed as CIVE 3208.

Prerequisite(s): EARTH 2406 and EARTH 3405.

Lectures three hours a week, laboratory three hours alternate weeks.

ERTH 4206 [0.5 credit]**Contaminant and Remediation Hydrogeology**

Geochemical and physical processes controlling contaminant release, migration, and fate in groundwater along with the processes and techniques used for contaminant mitigation and remediation. Examples will include organic and inorganic contaminants in a variety of settings.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 3003 and EARTH 3205.

Lectures and seminars three hours per week.

ERTH 4209 [0.5 credit]**Mineral Exploration Field Geology**

Introduction to the essentials of conducting geological mapping campaign in the Canadian Shield in a field area that has seen considerable industry exploration for volcanogenic massive sulfide mineralization. Activities include outcrop and trench mapping, strain analysis, interpretation of geophysical data, drilling proposals, report writing.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 3209.

Prerequisite(s): ERTH 2104, ERTH 3207, ERTH 3806.

Field work for two weeks off-campus. A supplementary fee will apply.

ERTH 4303 [0.5 credit]**Resources of a Finite Earth**

Earth's resources: where they occur, how they are concentrated, how they are extracted and used, how human exploitation of natural resources affects the environment, and the limits to growth imposed by finite supplies of natural resources.

Prerequisite(s): third-year standing in any degree program.

Lectures three hours a week.

ERTH 4305 [0.5 credit]**Carbonate Sedimentology**

The origin, composition and diagenesis of carbonate rocks. Study of modern and ancient platform systems; development of facies models; petrographic and geochemical analysis of limestones and dolostones.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3203 or ERTH 3206.

Lecture two hours a week and a laboratory three hours a week.

ERTH 4306 [0.5 credit]**Resource Basin Analysis**

Surface and subsurface geological and geophysical techniques used to define the distribution and origin of geological basins, the architecture of basin fill, and characterize the distribution of water, petroleum and mineral resources.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3203 or ERTH 3206, ERTH 3205, and ERTH 3806.

Lectures, seminars and laboratory five hours a week.

ERTH 4402 [0.5 credit]**Structural Geology**

A study of the structural evolution of mountain belts, with emphasis on field methods.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3806.

Lectures, seminars and laboratory five hours a week.

ERTH 4403 [0.5 credit]**Tectonic Evolution of Canada**

Geologic evolution of Canada focusing on geological styles and tectonic processes of Archean cratons, Proterozoic and Phanerozoic orogenic belts.

Prerequisite(s): ERTH 3806.

Lectures and seminars three hours a week.

ERTH 4504 [0.5 credit]**Advanced Igneous Petrology**

Volcanology, petrology, mineralogy and geochemistry of igneous rocks and their tectonic setting. May include one to two weeks of field-based instruction with costs borne by the student.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3003.

Field excursions in addition to lectures or seminars three hours per week.

ERTH 4507 [0.5 credit]**Advanced Metamorphic Petrology**

Introduction to the quantitative analysis of pressure-temperature-time trajectories and rock-forming processes during metamorphic petrogenesis; may include one or two weeks of field-based instruction, with costs borne by the student.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 2802 and ERTH 3207.

Field excursions, lectures, or seminars three hours per week.

ERTH 4707 [0.5 credit]**Engineering Seismology**

Seismological topics with engineering applications. Characterization of seismicity and seismic sources (areas and faults). Seismic hazard analysis. Empirical and theoretical modeling of strong ground motion in time and frequency domains.

Prerequisite(s): (MATH 1004 or MATH 1007), (MATH 1104 or MATH 1107), STAT 2507 and ERTH 3405 or permission of the department.

Also offered at the graduate level, with different requirements, as ERTH 5707, for which additional credit is precluded.

Lectures three hours a week.

ERTH 4801 [0.5 credit]**Physics of the Earth**

The physical properties of the solid Earth. Gravitational, magnetic and palaeomagnetic fields; seismology and earthquake occurrence; heat flow and thermal history. Geodynamic processes.

Prerequisite(s): ERTH 3405.

Also offered at the graduate level, with different requirements, as ERTH 5701, for which additional credit is precluded.

Lectures three hours a week.

ERTH 4803 [0.5 credit]**Radiogenic Isotope Geology**

Use of radiogenic isotope systems to understand the differentiation history and evolution of large-scale isotopic reservoirs. Data, models and interpretations behind our present day knowledge and understanding of the Earth's history. Assessment of geochronological results and interpretations.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3003.

Also offered at the graduate level, with different requirements, as ERTH 5609, for which additional credit is precluded.

Lectures, seminars or laboratories three hours per week.

ERTH 4804 [0.5 credit]**Exploration Geophysics**

Application of geophysical methods to explore for petroleum and mineral resources, with emphasis on seismic and electromagnetic methods. Case histories illustrate the concepts.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3405.

Lectures and laboratories five hours per week.

ERTH 4807 [0.5 credit]**Field Geology II**

Field camp integrating advanced field, theory and experimental data. Assessment is based on reports, seminars, and oral examinations. Part of the cost is borne by the student. Departmental funding assistance is available for only one 4000-level field course per student.

Includes: Experiential Learning Activity

Prerequisite(s): completion of the third-year Earth Sciences course requirements and permission of the Department. A supplementary fee will apply.

Field work off campus.

ERTH 4808 [0.5 credit]**Vertebrate Paleontology Field Camp**

Field camp extends the student's vertebrate paleontological knowledge by integrating field, theory, and experimental data. Assessment based on written reports and seminars. Part of the cost is borne by the student. Departmental funding assistance is available for only one 4000-level field course per student.

Includes: Experiential Learning Activity

Prerequisite(s): ERTH 3111 or ERTH 3112, and ERTH 3113. A Major CGPA of 8.5 or higher and permission of the department is required at the time of registration.

Field work for two weeks off campus. A supplementary fee will apply.

ERTH 4815 [0.5 credit]**Natural Hazards in Canada**

Overview of the main natural hazards (such as floods, landslides, forest fires, earthquakes) and severe weather phenomena (such as ice storms, hail, tornadoes) in the Canadian environment. Risk of catastrophic events and their impact on society and infrastructure.

Prerequisite(s): third-year standing in earth science programs or permission of the department.

Also offered at the graduate level, with different requirements, as ERTH 5215 and IPIS 5505, for which additional credit is precluded.

Lectures three hours a week.

ERTH 4820 [0.5 credit]**Research Methods in Earth Sciences**

Research approaches, methodologies and resources in Earth Sciences; analytical methods in Earth Sciences; data acquisition, evaluation and interpretation; principles and strategies of scientific and professional writing; and communication of results.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Earth Sciences programs.

Lectures, seminars, or laboratories three hours a week.

May also include visits to other research institutes or workshops with visiting instructors.

ERTH 4908 [1.0 credit]**Honours Thesis**

Independent studies. Requires prior written approval of a topic from a supervisor and the course co-ordinator. Oral and written proposal, progress and defence reports are required.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 4909, ERTH 4910.

Prerequisite(s): restricted to B.Sc. Honours and Combined Honours ERTH programs. Major CGPA 8.5 or higher at time of registration for the course.

ERTH 4909 [0.5 credit]**Research in Earth Sciences**

Understanding research methods, data interpretation and presentation, through readings, seminars and/or laboratory projects related to a topic selected by the student with approval of a faculty advisor.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 4908, ERTH 4910.

Prerequisite(s): restricted to B.Sc. Honours and Combined Honours Earth Sciences programs.

ERTH 4910 [1.0 credit]**Honours Thesis in Resource Evaluation**

Independent studies: Analysis and interpretation of geological, environmental and/or financial data to determine economic value of a natural resource, and its viability for sustainable development. Requires approval of the supervisor and course coordinator. Oral and written proposal, progress and defense reports are required.

Includes: Experiential Learning Activity

Precludes additional credit for ERTH 4908 and ERTH 4909.

Prerequisite(s): Restricted to B.Sc. Honours in Earth Sciences with Concentration in Finance: Resource Valuation. Major CGPA 8.5 or higher at time of registration for the course.

Economics (ECON)

Economics (ECON) Courses**ECON 1000 [1.0 credit]****Introduction to Economics**

An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation, and international economic problems.

Precludes additional credit for ECON 1001, ECON 1002, and FYSM 1003.

Lectures three hours a week, discussion groups one hour a week.

ECON 1001 [0.5 credit]**Introduction to Microeconomics**

An introduction to the major tools and policy problems of microeconomics. Economic analysis is applied to a variety of contemporary issues such as taxation, pollution, wage determination, poverty, market power, and international trade.

Precludes additional credit for ECON 1000 and FYSM 1003.

Lectures three hours a week, discussion groups one hour a week.

ECON 1002 [0.5 credit]**Introduction to Macroeconomics**

An introduction to the major tools and policy problems of macroeconomics. Economic analysis is applied to a variety of contemporary problems such as: saving, investment and interest rates; unemployment; money and inflation; exchange rates; fiscal and monetary policy.

Precludes additional credit for ECON 1000 and FYSM 1003.

Lectures three hours a week, discussion groups one hour a week.

ECON 1401 [0.5 credit]**Elementary Mathematics for Economics I**

Functional relations: functional forms and error terms. Graphing economic magnitudes: scatter diagrams, time-series graphs, functional relationships. Applied calculus: mechanics of differentiation and integration, elasticity, consumer/producer surplus. Applied algebra: solving systems of linear equations and Keynesian national-income analysis. Problem solving approaches.

Also listed as MATH 1401.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.

Prerequisite(s): Ontario Grade-12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1001 or ECON 1000 or FYSM 1003, which may be taken concurrently with ECON 1401.

Lectures three hours a week, tutorials one hour a week.

ECON 1402 [0.5 credit]**Elementary Mathematics for Economics II**

Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.

Also listed as MATH 1402.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1201, BIT 1200, MATH 1007, MATH 1009, MATH 1104, MATH 1107, MATH 1119, MATH 1052, MATH 1152.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401 or MATH 1401 with a grade of C- or higher.

Lectures three hours a week, tutorials one hour a week.

ECON 2001 [0.5 credit]**Intermediate Microeconomics for Non-Mathematical Majors**

The main topics in microeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their applications. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.I.B., B.Math., or B.Sc. program.

Precludes additional credit for ECON 2002 (no longer offered), ECON 2003 (no longer offered), ECON 2009, ECON 2020, and ECON 2030.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2009 [0.5 credit]**Managerial Economics**

An economic analysis of managerial decision-making. Elements of production and cost; price and output determination under perfectly and imperfectly competitive market structures; the role of information; topics in business strategy; and the impact of government intervention. Not open to students in any Economics program.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2020.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; MATH 1009 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and half hours a week.

ECON 2020 [0.5 credit]**Intermediate Microeconomics I: Producers and Market Structure**

Theory of the firm: elements of production and cost; input allocation, pricing, and firm behaviour under perfectly and imperfectly competitive market structures; the role of information; game theory and public policy, including basic competition policy.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), ECON 2003 (no longer offered), and ECON 2009.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2030 [0.5 credit]**Intermediate Microeconomics II: Consumers and General Equilibrium**

Theory of consumer choice and demand; applications to intertemporal choice, labour supply, and/or choice under uncertainty; welfare analysis; general equilibrium theory; externalities and the role of government.

Precludes additional credit for ECON 2001, ECON 2002 (no longer offered), and ECON 2003 (no longer offered).

Prerequisite(s): ECON 2020 with a grade of C- or higher or ECON 2009 with a grade of C+ or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2101 [0.5 credit]**Intermediate Macroeconomics for Non-Mathematical Majors**

The main topics in macroeconomic theory presented in a relatively non-technical manner (e.g., without the requiring knowledge of calculus) with illustrations of their application. Not open to students in any Economics, B.Com., B.C.S., B.Eng., B.I.D., B.Math., or B.Sc. program. Precludes additional credit for ECON 2102 and ECON 2103.

Prerequisite(s): ECON 1002 or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2102 [0.5 credit]**Intermediate Macroeconomics I**

An introduction to the macroeconomic modeling of output in the short and long run, and to fixed-price models of the closed and open economy over the business cycle. Policy prescriptions in relation to the business cycle are analysed.

Precludes additional credit for ECON 2101.

Prerequisite(s): ECON 1002 or ECON 1000 or FYSM 1003 with a grade of C- or higher; ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2103 [0.5 credit]**Intermediate Macroeconomics II**

An extension of macroeconomic modeling to the dynamics of wage-price adjustment in the intermediate and long run, to the theoretical foundations of basic macroeconomic relationships, and to contemporary policy issues arising in relation to the business cycle and long-run growth.

Precludes additional credit for ECON 2101.

Prerequisite(s): ECON 2102 with a grade of C- or higher, ECON 1001 with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2210 [0.5 credit]**Introductory Statistics for Economics**

Basic statistical methods for the study of economics.

Topics include descriptive statistics, elementary probability theory, sampling distributions, estimation and hypothesis testing for one and two population parameters.

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2200 (no longer offered), ECON 2201 (no longer offered), STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): ECON 1401/MATH 1401 (with a grade of C- or higher) and ECON 1402/MATH 1402, or equivalent department-approved MATH course pair. May be taken concurrently with ECON 1402/MATH 1402.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2220 [0.5 credit]**Introductory Econometrics**

Topics include correlation, simple and multiple linear regression, and an introduction to statistical computing using an econometrics package. Emphasis on understanding appropriate methods and their properties, as distinct from their formal theoretical development. Empirical applications.

Precludes additional credit for ECON 2200 (no longer offered), ECON 2202 (no longer offered), STAT 2509, and STAT 2607.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 2708 [0.5 credit]**Applied Data Analysis**

An introduction to concepts and tools for using various forms of data to study applied economic problems. Topics may include identifying relevant datasets, collecting and cleaning both research-ready and user-assembled data sets, data visualization, and summary statistics.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 1005 or COMP 1405 or ECOR 1606, or equivalent, with a grade of C- or higher; and ECON/MATH 1402, with a grade of C- or higher (or an equivalent department-approved MATH course pair with a grade of C- or higher in each); and ECON 2210 (or equivalent), with a grade of C+ or higher.

Lectures three hours a week, tutorial 1.5 hours a week.

ECON 3001 [0.5 credit]**Mathematical Methods of Economics**

Constrained optimization via Lagrange and Kuhn-Tucker conditions; implicit functions and implicit differentiation; comparative static methods applied to models such as utility maximization and least-cost production; homogeneous functions; concave and convex functions; compounding and exponential functions; economic models involving integration; differential equations.

Precludes additional credit for ECON 2400 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003 with a grade of C- or higher; and ECON 1401 and ECON 1402 (or equivalent) with a grade of C- or higher in each and a combined grade point average in ECON 1401 and ECON 1402 of 6.50 or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 3050 [0.5 credit]**Introduction to Financial Economics**

The major theories and basic tools used to address modern financial economic issues. Topics may include time value of money, bond and stock valuation, investment criteria, capital budgeting, the risk-return tradeoff, options and option valuation, cost of capital, and the fundamentals of international corporate finance.

Precludes additional credit for BUSI 2503, BUSI 2504, ECON 2504 (no longer offered), BUSI 2505, and ECON 2505 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002 each with a grade of C- or higher, or ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON/MATH 1402 (or approved equivalent pair of first year math courses) with a grade of C- or higher, and BUSI 1002 or BUSI 1005 with a grade of C- or higher.

Lectures three hours a week.

ECON 3201 [0.5 credit]**Economic Thought and Policy in Canada**

An account of the interrelationship between economic theories expounded in Canada and their issue in national policy.

Precludes additional credit for ECON 3404 (no longer offered).

Prerequisite(s): an introductory course in one of the social sciences or Canadian history.

Lectures three hours a week.

ECON 3220 [0.5 credit]**Canadian Economic History**

A survey of Canadian economic history from the sixteenth century to the present.

Also listed as HIST 3220.

Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3203 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3230 [0.5 credit]**Selected Topics in Economic History**

An examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year. Also listed as HIST 3230.

Precludes additional credit for ECON 3005 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3300 [0.5 credit]**Public Policy Toward Business**

The interaction of government and business in the Canadian economy. Reasons for government involvement in selected public policy areas. Topics covered may include competition policy, regulation of firms by boards and commissions, environmental regulation, and public enterprise.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3360 [0.5 credit]**Introduction to Labour Economics**

Basic principles of labour economics including market, institutional, and sociological forces. Technology and labour demand, wage systems, human capital, internal wage structure, market discrimination, female labour-force entry, wage-price spiral, household labour supply, and wage determination.

Precludes additional credit for ECON 3506 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4305 (no longer offered) or ECON 4306 (no longer offered) or ECON 4360.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3365 [0.5 credit]**Introduction to Industrial Relations**

An introduction to industrial relations covering such topics as: industrial relations systems, the functioning of trade unions, collective bargaining in Canada, and Canadian public policy in industrial relations.

Precludes additional credit for BUSI 3107 (no longer offered) and ECON 3507 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4365 or ECON 4605 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3370 [0.5 credit]**The Economics of Migration**

An introduction to the economic aspects of migration.

Topics include, among others: the economics of migration within countries; the economics of host country integration of immigrants; the impact of immigration on outcomes in the host country; the impacts of emigration on the home country.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3380 [0.5 credit]**The Economics of Gender and Ethnicity**

The impact of gender and ethnicity on labour-market outcomes. Topics may include: employment, work, earnings, and poverty; discrimination and policy responses; immigration; the economics of the household; gender and development; micro-credit; labour standards. Precludes additional credit for ECON 3100 (no longer offered) and ECON 3810 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3403 [0.5 credit]**Introduction to Public Economics: Expenditures**

The role and nature of the government sector in the economy, the theory of public goods, the equity and efficiency effects of public expenditures, voting rules and fiscal politics, techniques of public expenditure analysis, and intergovernmental fiscal relations.

Precludes additional credit for ECON 3003 (no longer offered) and ECON 3408 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4402 (no longer offered) or ECON 4403.

Prerequisite(s): ECON 1001 and ECON 1002 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3405 [0.5 credit]**Introduction to Public Economics: Taxation**

The role and nature of the government sector in the economy, principles of taxation, tax equity, incidence and excess burden of taxes, structure of taxes in the economy, role of personal, corporate, sales and wealth taxes, fiscal stabilization policy, and the economics of public debt. Precludes additional credit for ECON 3003 (no longer offered) and ECON 3407 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4401 (no longer offered) or ECON 4404.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3420 [0.5 credit]**Economic Theories of Federalism**

Economic dimensions of federalism, with reference to Canadian experience. Issues include: fiscal federalism; impact of federal economic policies on provincial economies; decentralization possibilities for fiscal and economic development policies; and consequences of policies such as provincial trade barriers and impediments to factor flows.

Precludes additional credit for ECON 3206 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3450 [0.5 credit]**Political Economy in the Modern State**

An examination of the role of government in the economy, with emphasis on alternate forms of social coordination and the advantages and disadvantages of each form in the Canadian system.

Precludes additional credit for ECON 3305 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3460 [0.5 credit]**Introduction to Health Economics**

Health as an economic good: demand and need; supply and cost. Public health and personal health care.

Alternative health-care delivery systems: financing, performance, quality, and cost effectiveness.

Preclusion: credit will not be given if taken concurrently with or after ECON 4460.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3508 [0.5 credit]**Introduction to Economic Development**

A discussion of the principles of economic development.

Application to the problems of the developing countries.

Precludes additional credit for ECON 3603 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4507.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3509 [0.5 credit]**Development Planning and Project Evaluation**

An introduction to the tools used in the planning and evaluation of development projects. Topics include the theory, application, strengths and limitations of cost-benefit analysis and competing approaches, and an examination of project evaluation techniques.

Precludes additional credit for ECON 3604 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3510 [0.5 credit]**African Economic Development**

Domestic and international aspects of development problems and policies in the African context. Topics may include human resource development, growth and poverty reduction, domestic resource mobilization, the implications of ethnic diversity, governance, and institutions, and issues of trade, investment, aid, migration, and health.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3600 [0.5 credit]**Introduction to International Economics**

A discussion of theory and policy in international trade and finance. Intended for students planning to take only 0.5 credit in international economics at the 3000-level.

Precludes additional credit for ECON 3601 and ECON 3602. Credit will not be given if taken concurrently with or after ECON 4601 or ECON 4602.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3601 [0.5 credit]**Introduction to International Trade**

An extension of the basic principles of economics to international trade. Topics covered include the theory of international specialization, tariffs and other barriers to trade, trade liberalization and economic integration, international movements of labour and capital, trade and development.

Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4601.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3602 [0.5 credit]**International Monetary Problems**

A discussion of the theory and institutions of the international monetary system, and the related balance of payments problems of nation states.

Precludes additional credit for ECON 3600. Credit will not be given if taken concurrently with or after ECON 4602.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3607 [0.5 credit]**Monetary and Financial Institutions**

The behaviour of financial intermediaries and institutions such as the Bank of Canada, banks and trust companies, and regulatory bodies such as the Canada Deposit Insurance Corporation and the Superintendent of Financial Institutions.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3706 [0.5 credit]**Applied Econometrics**

Introduction to applied econometric methods with emphasis on the use of the regression model for empirical research. Real-world examples are used extensively to illustrate key concepts. Hands-on computer exercises are an integral part of the course.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 3801 [0.5 credit]**Regional Economics**

Unequal distribution of economic activity between spatially defined regions. The pattern in Canada since World War II and the outlook for the future is evaluated, considering "natural" adjustment mechanisms and policy tools.

Precludes additional credit for ECON 3401 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3803 [0.5 credit]**The Economics of Natural Resources**

The application of economic analysis to questions concerning natural-resource use, management and conservation, as well as market failures and environmental effects. Policy problems relating to natural resources are discussed.

Precludes additional credit for ECON 3805 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3804 [0.5 credit]**Environmental Economics**

Microeconomic analysis of environmental issues. Frameworks for measuring environmental costs and benefits. The efficiency of alternative pollution control policies. Applications include air and water pollution and global environmental problems such as ozone depletion and global warming.

Precludes additional credit for ECON 3806 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3807 [0.5 credit]**European Economic Integration**

A discussion of the theories of free trade areas and customs, monetary, and economic unions, and the related historical experience of Europe. Topics include: currency area and the euro, coordination of fiscal policy and the EU budget, common agricultural policy, labour mobility, and regional policy.

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3808 [0.5 credit]**The Economics of Transition**

The transition from state ownership and central planning to mixed ownership structure with resource allocation by market mechanisms. "Classical socialism" is criticized and the processes of transition in countries of Central and Eastern Europe, the former Soviet Union, and Asia are compared.

Precludes additional credit for ECON 3700 (no longer offered), ECON 3701 (no longer offered), and ECON 3702 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3820 [0.5 credit]**Topics in Canadian Economic Policy**

Economic analysis applied to selected policy areas, issues or institutions. One or more of the following topics may be dealt with: decision-making by bureaucratic institutions, policy problems arising from poverty, the economics of natural resources and pollution, urban economics.

Precludes additional credit for ECON 3800 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3840 [0.5 credit]**An Economic Analysis of Law**

An introduction to the application of economic principles and methodology to a variety of legal problems with emphasis on the theory of property rights and the allocation of resources.

Precludes additional credit for ECON 3204 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3850 [0.5 credit]**Economics of Information and the Media**

An introduction to the economics of information and the media, with a focus on the analysis of production and distribution of information, the application of theory to selected communications-media industries in Canada, and the analysis of existing Canadian policies.

Precludes additional credit for ECON 3200 (no longer offered). Credit will not be given if taken concurrently with or after ECON 4205 (no longer offered) or ECON 4850.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3856 [0.5 credit]**Housing Economics**

Examination of housing markets, housing finance, and government housing policy using the tools of microeconomics. Models of demand, supply, and market equilibrium emphasizing the special characteristics of housing, including heterogeneity, durability, and spatial fixity. Relationships to other goods and markets and the wider macroeconomy.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3860 [0.5 credit]**Agricultural Economics**

An examination of the agricultural industry in the national economy and in low-income societies, with emphasis on the working out of the basic forces that determine supply and demand for the industry, and the functional distribution of income among the factors of production.

Precludes additional credit for ECON 3406 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3864 [0.5 credit]**Transportation Economics**

Factors affecting demand for and supply of transportation services; demand elasticities and cost structures of various modes of transport; transportation service pricing. Topics may include transport demand forecasting, transportation investment and project appraisal, and the role of transport in economic development.

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3870 [0.5 credit]**Comparative Economic Systems**

Analysis of the structure, institutions, and performance of alternative economic systems, including capitalism, socialism, and communism. Selected countries are studied as examples of these systems.

Precludes additional credit for ECON 4806 (no longer offered) and ECON 4807 (no longer offered).

Prerequisite(s): ECON 1001 or ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3878 [0.5 credit]**Contemporary Economic Issues**

Content may vary from year to year and is announced in advance of the registration period.

Lectures and/or seminars three hours a week.

ECON 3880 [0.5 credit]**Special Studies in Economics**

Content may vary from year to year and is announced in advance of the registration period.

Precludes additional credit for ECON 3402 (no longer offered).

Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003.

Lectures and/or seminars three hours a week.

ECON 3900 [0.5 credit]**Research Methods in Economics**

The process of doing basic research in economics: development of the research proposal, finding and critically evaluating relevant literature, model development, methods for locating and collecting economic data, analytical methods, and writing mechanics. This course has a strong practical focus.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Seminars three hours a week.

ECON 3920 [0.5 credit]**Professional Practice of Economics**

Development of skills used by professional economists, including writing professional documents such as policy briefs and memos, data visualization, communication of economic ideas in non-technical terms, presentation skills, and team-based problem solving.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2030 with a grade of C+ or higher, ECON 2103 with a grade of C+ or higher, ECON 2210 (or equivalent) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Seminars three hours a week.

ECON 3999 [0.0 credit]**Co-operative Work Term**

Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Honours Economics or Applied Economics Co-operative Education option, satisfactory completion of the Co-op preparation classes offered by the Co-operative Education Office, and permission of the Department.

ECON 4001 [0.5 credit]**Mathematical Analysis in Economics**

Analysis and algebra: set theory, sequences and series, quadratic forms, separation and fixed-point theorems. Static optimization: the Weierstrass, Lagrange, and Kuhn-Tucker theorems; convexity and quasi-convexity; the envelope theorem. Dynamic optimization: the Maximum Principle and Bellman's equation. Applications of these tools to economic theory.

Prerequisite(s): ECON 3001 with a grade of C+ or higher. Lectures three hours a week, tutorials one and a half hours a week.

ECON 4002 [0.5 credit]**Statistical Analysis in Economics**

Probability: including conditional probability, random variables and distributions, unconditional and conditional expectations. Distributions: including special distributions and their properties, and sampling distributions of estimators. Nonparametric methods and limit theorems; stochastic processes; simulation and bootstrap methods. Applications of these tools to economic theory.

Precludes additional credit for STAT 3500 (no longer offered), STAT 3508, and STAT 3558.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4004 [0.5 credit]**Operations Research I**

Linear programming, duality, sensitivity analysis, transportation and network problems. Both theory and a wide range of applications are studied.

Precludes additional credit for BUSI 2300 (no longer offered), MATH 3801, and SYSC 3200.

Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4005 [0.5 credit]**Operations Research II**

Dynamic programming, inventory models, queuing, simulation, and non-linear programming.

Prerequisite(s): ECON 1402 (or equivalent) with a grade of C- or higher, and ECON 2210 (or equivalent) or STAT 2605 or STAT 3502 with a grade of C- or higher.

Lectures three hours a week.

ECON 4020 [0.5 credit]**Advanced Microeconomic Theory**

Advanced theory of individual economic behaviour in production, consumption, and general equilibrium. Elementary tools of mathematics are employed in the exposition of most topics.

Precludes additional credit for ECON 4200 (no longer offered).

Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4020.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4021 [0.5 credit]**Advanced Macroeconomic Theory**

An introduction to advanced macroeconomic models. Topics may include analysis of business cycles, inflation, unemployment, economic growth, fiscal and monetary policy, consumption decisions of households, and investment decisions of firms.

Precludes additional credit for ECON 4201 (no longer offered).

Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4021.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4025 [0.5 credit]**Game Theory and Economics**

Analysis of strategic behaviour using methods of modern game theory. Topics include extensive-form and strategic-form representation of games, and solution concepts for games of complete and incomplete information such as Nash equilibrium, subgame perfect equilibrium, and perfect Bayesian equilibrium. Economic applications will be presented.

Prerequisite(s): ECON 2020 (or ECON 2009) and ECON 2030 each with a grade of C+ or higher or ECON 2002 (no longer offered) and ECON 2003 (no longer offered) each with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2210 (or equivalent, or STAT 2507 or STAT 2606 or STAT 3502), which may be taken concurrently with ECON 4025.

Lectures three hours a week.

ECON 4026 [0.5 credit]**Macroeconomic Dynamics**

Dynamic models as applied to topics such as economic growth, business cycles, consumption, investment, inflation, and real-financial linkages. Empirical and/or policy issues may also be discussed.

Prerequisite(s): ECON 2102 with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; ECON 3001 (or MATH 2000 or MATH 2004) with a grade of C+ or higher; and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502), which may be taken concurrently with ECON 4026.

Lectures three hours a week.

ECON 4030 [0.5 credit]**Economics of Uncertainty and Information**

Uncertainty, imperfect information, and asymmetric information in the allocation of resources and the performance of markets and alternative coordinating mechanisms.

Precludes additional credit for ECON 4006 (no longer offered) and ECON 4260 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4051 [0.5 credit]**Financial Asset Pricing**

Factors that drive security prices and models that attempt to account for aspects of security returns, including the generic arbitrage pricing model, the capital asset pricing model (CAPM), the consumption CAPM, and the intertemporal CAPM.

Precludes additional credit for BUSI 3500, ECON 3500 (no longer offered), BUSI 3502, ECON 3502 (no longer offered).

Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4052 [0.5 credit]**Corporate Financial Economics**

Optimization and corporate finance. Corporate governance and managerial compensation. Capital structure and the Modigliani-Miller theorem. Agency theory and asymmetric information. The issue of equity, debt, and other securities. Dividend policy. Investment and capital budgeting, NPV, and real options.

Precludes additional credit for BUSI 3500 (or ECON 3500, no longer offered) and BUSI 3502 (or ECON 3502, no longer offered).

Prerequisite(s): ECON 3050 with a grade of C- or higher, and ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4053 [0.5 credit]**Financial Market Modeling**

The modeling of the evolution of prices in (near) efficient markets and the evaluation of functions of these prices such as guarantees, options, warrants, futures, and other types of derivatives. Arrow-Debreu state-contingent claims. Notions of complete and incomplete markets.

Precludes additional credit for ECON 4100 (no longer offered) and ECON 4504 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 3001 with a grade of C- or higher.

Lectures three hours a week.

ECON 4056 [0.5 credit]**Insurance Economics**

The theory of insurance founded on probability and decision theory. The optimal design of insurance policies from a risk-sharing and an information economics perspective. Principal-agent problems including adverse selection, asymmetric information, and moral hazard with implications for insurance. The interaction between insurance and other markets.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4057 [0.5 credit]**Behavioural Financial Economics**

Market efficiency and the limits of arbitrage. Heuristics and biases identified by behavioural decision theorists and their effect on the behaviour of managers and investors. Behavioural theories of market trading volume and asset prices. Behavioural approaches to corporate financial economics problems.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 3050 with a grade of C- or higher.

Lectures three hours a week.

ECON 4108 [0.5 credit]**Behavioural Economics**

Major factors underlying economic behaviour, including various views of the role of rationality in economic analyses of individual decision-making and institutional design and a detailed treatment of behavioural heuristics and biases and their implications for nudging techniques that aim to improve economic outcomes.

Prerequisite(s): ECON 2030 with a grade of C- or higher.

Lectures three hours a week.

ECON 4109 [0.5 credit]**Experimental Economics**

An introduction to the use of and insights gained from both laboratory- and field-type experimental methods in economic research. Topics include analysis of individual rationality, performance of markets, and design of economic systems. In-class experiments are an integral part of the course.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 with a grade of C- or higher.

Lectures three hours a week.

ECON 4209 [0.5 credit]**Selected Topics in the History of Economic Thought**

The development of economic thought through time in relation to selected economic problems.

Precludes additional credit for ECON 4105 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher, and ECON 2103 with a grade of C+ or higher.

Also offered at the graduate level, with different requirements, as ECON 5209, for which additional credit is precluded.

Lectures and/or seminars three hours a week.

ECON 4230 [0.5 credit]**Economic History**

The application of economic theory and quantitative techniques to selected topics in economic history, which may include historical patterns of growth and welfare, nineteenth-century globalization, technological change, the development of agriculture, industrialization, the Great Depression, and the origins of central banks.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Also offered at the graduate level, with different requirements, as ECON 5230, for which additional credit is precluded.

Lectures three hours a week.

ECON 4301 [0.5 credit]**Market Structure and Firm Behaviour**

Various theoretical and empirical studies of firm and market organization with emphasis on the pricing, advertising, investment and locational behaviour of firms in imperfectly competitive markets.

Precludes additional credit for ECON 4300 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4302 [0.5 credit]**Competition and Regulatory Policy**

Public policies relating to competition and regulation.

Topics may include: Ramsey pricing, peak-load pricing, cross-subsidization, access pricing (ECPR), multi-part pricing and price discrimination, predatory and targeted pricing, vertical restrictions, traditional regulation (including rate-of-return regulation), incentive regulation (including price caps), and the political economy of regulation.

Precludes additional credit for ECON 4300 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4309 [0.5 credit]**Applied Industrial Economics**

The empirical application of microeconomics, with special emphasis on the Canadian economy. Topics include: consumer demand, firm production and investment, and industrial and trade structure.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher.

Lectures three hours a week.

ECON 4360 [0.5 credit]**Labour Economics**

The application of price theory to the labour market. Topics include models of labour supply and labour demand, human capital and the economics of education, and unions and their impact on the labour market.

Precludes additional credit for ECON 4305 (no longer offered) and ECON 4306 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4365 [0.5 credit]**Industrial Relations**

Economic analysis of selected industrial relations and labour market policy problems. Topics include unionization, strike activity, the economics of occupational health and safety, pension policy, and the impact of new technology on the labour market.

Precludes additional credit for ECON 4605 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4403 [0.5 credit]**Public Economics: Expenditures**

A discussion of the theory of government expenditures and an examination of empirical attempts to quantify the theory. Examination of current topics such as expenditures and grants in the Canadian federation.

Precludes additional credit for ECON 4402 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4404 [0.5 credit]**Public Economics: Taxation**

A discussion of the theory of taxation and an examination of empirical attempts to quantify the theory. Some topics of current interest, such as the redistribution of income in Canada and tax reform, are examined.

Precludes additional credit for ECON 4401 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4407 [0.5 credit]**Project Evaluation**

Techniques and problems in the evaluation of public and private projects. Examination of alternative approaches to public decision-making including cost-benefit analysis, cost-effectiveness analysis, and multiple-objective frameworks. Case studies of projects in various areas such as natural resources, the environment, human resources, public services, and transportation.

Prerequisite(s): ECON 2030 with a grade of C- or higher and ECON 2220 (or equivalent, or STAT 2605 or STAT 3502) with a grade of C- or higher.

Lectures three hours a week.

ECON 4460 [0.5 credit]**Health Economics**

Economic analysis of the organization, financing, and utilization of health-care services. Topics include supply and demand of health care, the impact of private and social health insurance on demand, and policy issues in the provision of health care in Canada.

Prerequisite(s): ECON 2030 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4507 [0.5 credit]**The Economics of Development**

An examination of some theoretical approaches to the economics of development, together with analysis of some economic policy issues of a largely internal character, such as intersectoral investment allocation, income distribution, unemployment, and investment in human development.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4508 [0.5 credit]**International Aspects of Economic Development**

An analysis of the international economic policy problems of development in Asia, Africa and Latin America, focusing on international trade, direct foreign investment, technological transfer, regional integration, debt and development financing, and international migration.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher, and ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4601 [0.5 credit]**International Trade Theory and Policy**

International trade theory and its implications for economic policy. Topics such as determinants of trade and specialization, gains from trade and commercial policy, international factor mobility, growth and development.

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4602 [0.5 credit]**International Monetary Theory and Policy**

International monetary theory and its implications for economic policy. Topics such as sources of disequilibrium and adjustment in the balance of payments under fixed versus flexible exchange rates, international capital movements, and international monetary reform.

Prerequisite(s): ECON 2103 with a grade of C- or higher.

Lectures three hours a week.

ECON 4670 [0.5 credit]**Monetary Theory and Policy**

The role of money and the monetary system in determining income, employment, and price level; techniques of monetary policy; the relationship between monetary and fiscal policy.

Precludes additional credit for ECON 4607 (no longer offered) and ECON 4608 (no longer offered).

Prerequisite(s): ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4700 [0.5 credit]**Measurement Economics**

National accounting and index numbers. Topics may include: the measurement of output and income, capital and depreciation, productivity, employment and unemployment, poverty and inequality, household production, pollution and resource depletion, and the balance of payments; price indexes; standard-of-living indexes; and international comparisons.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4706 [0.5 credit]**Econometrics I**

An introduction to econometric theory and analysis of the classical normal linear regression model. Topics include estimation methods, hypothesis testing, multicollinearity, indicator variables, heteroscedasticity, and an introduction to time-series methods.

Prerequisite(s): ECON 2210 (or equivalent) with a grade of C+ or higher, and ECON 2220 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week, tutorials one and a half hours a week.

ECON 4707 [0.5 credit]**Econometrics II**

An extension of ECON 4706. Topics include model specification, diagnostic checks, qualitative and limited dependent variables, panel data, and simultaneous equations models.

Prerequisite(s): ECON 4706 with a grade of C+ or higher, or STAT 3503 with a grade of C+ or higher.

Lectures three hours a week.

ECON 4708 [0.5 credit]**Economic Data Science - Analytics**

An introduction to methods of statistical and machine learning analytics for economic analysis. Tools relevant for both small and large data sets will be covered. Topics may include approaches to classification, dimension reduction strategies, and prediction models and tools.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2708 with a grade of C+ or higher; and ECON 4706 (or equivalent) with a grade of C+ or higher.

Lectures three hours a week.

ECON 4709 [0.5 credit]**Economic Data Science - Applications**

Application of data science and machine learning methods to real-world economic problems. Students will apply their data science knowledge in hands-on projects to answer topical research questions. This course has a strong practical focus.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 4708 with a grade of C+ or higher.

Lectures three hours a week.

ECON 4713 [0.5 credit]**Time-Series Econometrics**

An introduction to the basic concepts and tools of time-series econometrics. Topics include stationary and non-stationary time series, identification, estimation and forecasting, unit root testing, cointegration analysis, error-correction models and ARCH models, together with relevant economic applications.

Precludes additional credit for ECON 4803 (no longer offered) and STAT 4603.

Prerequisite(s): ECON 4706 with a grade of C- or higher, or STAT 3503 with a grade of C- or higher.

Lectures three hours a week.

ECON 4714 [0.5 credit]**Advanced Topics in Applied Econometrics**

Advanced coverage of one or more areas of current interest in applied econometrics. An empirical research project may be required.

Includes: Experiential Learning Activity

Precludes additional credit for ECON 4804 (no longer offered).

Prerequisite(s): ECON 4706 with a grade of C+ or higher; and ECON 4707, which may be taken concurrently with ECON 4714.

Lectures three hours a week.

ECON 4800 [0.5 credit]**Spatial Economics**

Spatial dimensions of economic activity and organization. Theories of urban agglomeration effects, transport costs, forward and backward linkages, and associated spatial dynamics; empirical analysis of spatial economic clusters; effects of globalization and economic growth on the spatial structure of production and the associated policy response.

Prerequisite(s): ECON 2030 with a grade of C- or higher, ECON 2103 with a grade of C- or higher, and ECON 2220 (or equivalent) with a grade of C- or higher.

Lectures three hours a week.

ECON 4850 [0.5 credit]**Advanced Economics of Information and Media**

The economics of information production, its distribution through broadcasting, publishing or the Internet, its exchange through telephone and e-mail networks, and its use in private and public organizations. An analysis of telecommunications, broadcasting, copyright, privacy, and Internet policy.

Precludes additional credit for ECON 4205 (no longer offered).

Prerequisite(s): ECON 2030 with a grade of C- or higher or ECON 2003 (no longer offered) with a grade of C- or higher.

Lectures three hours a week.

ECON 4880 [0.5 credit]**Special Topics in Economics**

Selected advanced topics of interest to upper-year Honours Economics and Applied Economics students. Topics may vary from year to year and are announced in advance of the registration period.

Includes: Experiential Learning Activity

Prerequisite(s): ECON 2030 with a grade of C+ or higher or ECON 2003 (no longer offered) with a grade of C+ or higher; ECON 2103 with a grade of C+ or higher; and ECON 3706 or ECON 4706, which may be taken concurrently with ECON 4880 or may be waived by permission of the Department.

Lectures and/or seminars three hours a week.

ECON 4903 [0.5 credit]**Tutorial in Economics**

An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.

Prerequisite(s): permission of the Department.

ECON 4904 [0.5 credit]**Tutorial in Economics**

An additional tutorial in economics may be taken subsequent to, or concurrently with, ECON 4890 (no longer offered) or ECON 4901 (no longer offered) or ECON 4902 (no longer offered) or ECON 4905.

Prerequisite(s): permission of the Department.

ECON 4905 [0.5 credit]**Honours Capstone Seminar**

The development of individual research projects in suitable economics topic areas with the exchange of results at each stage through in-class discussions and written and oral reports and culminating in a major research paper by each course registrant.

Includes: Experiential Learning Activity

Precludes additional credit for ECON 4890, ECON 4900 (no longer offered), ECON 4901, and ECON 4902.

Prerequisite(s): ECON 3900 with a grade of C+ or higher, ECON 3920 with a grade of C+ or higher, and registration in an Honours Economics program.

Seminars three hours a week.

ECON 4908 [1.0 credit]**Honours Essay**

Students taking Honours in Economics or Applied Economics may write an Honours essay during their final year. This essay counts for one credit. Students work under an individual faculty adviser.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Department.

ECON 4990 [0.5 credit]**Research and Writing in Economics**

Development of fundamental research and writing skills pertinent to the discipline of economics. Writing summary reviews of economics texts of increasing sophistication; writing up empirical and/or theoretical results of increasing complexity.

Prerequisite(s): registration in the Post-Baccalaureate Diploma in Economics program and/or permission of the Department.

Seminars three hours a week, tutorials one and a half hours a week.

Electronics (ELEC)

Electronics (ELEC) Courses**ELEC 2501 [0.5 credit]****Circuits and Signals**

Properties of signals. Basic circuit elements: voltage and current sources. Kirchhoff's laws, linearity, superposition. Thevenin and Norton's theorems. Circuit simplification. AC steady-state analysis: impedance, admittance, phasors, frequency response. Transient response of RL and RC circuits: form of response, initial and final conditions. RLC circuits: resonance.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 3605.

Prerequisite(s): MATH 1005 (may be taken concurrently) and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2507 [0.5 credit]**Electronics I**

Qualitative semiconductor physics, leading to the diode equation. Diode applications. Operational amplifiers and their application in feedback configurations including active filters. Introduction to bipolar transistors and MOSFETs, analysis of biasing circuits. Transistor applications including small signal amplifiers.

Includes: Experiential Learning Activity

Precludes additional credit for OSS 2006, PLT 2006 (no longer offered).

Prerequisite(s): MATH 1005, ELEC 2501, and second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2602 [0.5 credit]**Electric Machines and Power**

Modeling and analysis of basic electric power systems. Single-phase and three-phase circuits: real and reactive power, per-phase analysis, power factor correction. Electro-mechanical energy conversion: operation, characteristics and analysis of transformers, DC-, induction-, and synchronous electric machines. Motor and generator operation.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1004 and ELEC 2501, and second-year status in Engineering.

Lectures 3 hours per week. Laboratory and problem analysis 3 hours per week alternate weeks.

ELEC 2607 [0.5 credit]**Switching Circuits**

Boolean algebra, gate, combinatorial circuits. DeMorgan notation, sum-of-product and product-of-sum forms. Logic arrays, PLAs and PALs. Flip-flops, latches, sequential circuits, state graphs and state minimization. Counters and controllers. Hazards. Asynchronous sequential circuits, race free assignment, realization.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2310.

Prerequisite(s): PHYS 1004 or PHYS 1002 and second-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 3105 [0.5 credit]**Electromagnetic Fields**

Vector calculus: gradient, divergence, curl, integration of vector fields. Electrostatics, magnetostatics. Boundary conditions. Poisson's and Laplace's equations: method of images, separation of variables, iterative method. Electric and magnetic properties of matter. Magnetic circuits. Lorentz force. Motional emf, electromagnetic induction. Maxwell's equations.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005, MATH 2004, and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3500 [0.5 credit]**Digital Electronics**

Digital circuit design using verilog and logic synthesis, the electronic properties of logic gates, electrical interfacing between logic families, asynchronous to synchronous interfacing, clock distribution and timing, VLSI design options. Students implement substantial circuits with field-programmable gate arrays.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2507 and ELEC 2607.

Lectures three hours a week, laboratory three hours a week.

ELEC 3508 [0.5 credit]**Power Electronics**

Power semiconductor devices: Thyristor, GTO, IGBT, SiC, GaN. Converter circuits: controlled AC to DC rectifiers, choppers, DC to AC inverters, AC voltage controllers. Protection of conversion circuits. Applications to high-efficiency control of electric machines and electromechanical energy conversion devices.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2507 and ELEC 2602.

Lectures three hours per week, laboratories/problem analysis three hours per week.

ELEC 3509 [0.5 credit]**Electronics II**

Introduction to semiconductor devices and ICs. DC, AC and switching properties of BJTs. Linear amplifiers; bandwidth considerations; two-port analysis. Large signal amplifiers; power amplifiers; transformerless circuits. Feedback and operational amplifiers; gain, sensitivity, distortion and stability. Filter design. Oscillators.

Includes: Experiential Learning Activity

Precludes additional credit for : ELEC 3509 may not be taken for credit by students in the Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering programs.

Prerequisite(s): ELEC 2507.

Lectures three hours a week, laboratory three hours a week.

ELEC 3605 [0.5 credit]**Electrical Engineering**

DC circuits: elements, sources, analysis. Single phase AC circuits: phasors, RLC circuits, real and reactive power, impedance, network analysis, three phase systems. Power transformers. DC motors: operation and characteristics.

AC motors: single phase and three phase.

Precludes additional credit for ELEC 2501.

Prerequisite(s): MATH 1005 and (PHYS 1004 or PHYS 1002), and second-year status in Engineering.

Lectures three hours a week, problem analysis 1.5 hours a week.

ELEC 3907 [0.5 credit]**Engineering Project**

Student teams work on open-ended projects based on previously acquired knowledge. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, a series of project reports, and oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2507, ELEC 2607, third year status in Engineering, and enrolment in the Electrical Engineering or Engineering Physics program.

Lecture two hours per week, laboratory six hours per week.

ELEC 3908 [0.5 credit]**Physical Electronics**

Fundamentals of device physics and operation of the pn junction, bipolar transistor and MOSFET. Basic integrated circuit processing and application to diodes, BJTs and MOSFETs. Correlation between processing, structure, operation and modeling. Consideration of parasitic and small-geometry effects, reliability and process variation.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 4705.

Prerequisite(s): ELEC 2507.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3909 [0.5 credit]**Electromagnetic Waves**

Maxwell's equations and EM wave solutions. Polarization. Poynting vector. EM waves in dielectrics and conductors; skin depth. Reflection and refraction. Standing waves. Fresnel relations, Brewster angle. Transmission lines. Line termination, basic impedance matching and transformation. Smith charts. Introduction to guided waves; slab waveguide.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3308.

Prerequisite(s): ELEC 3105 or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ELEC 4502 [0.5 credit]**Microwave Circuits**

Introduction to microwave semiconductor devices, microwave passive components, microwave integrated circuit technology, and microwave circuit measurements. Basic network theory and scattering matrix description of circuits. Design of matching networks, filters, amplifiers and oscillators at microwave frequencies.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 4503; may be taken concurrently.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4503 [0.5 credit]**Radio Frequency Lines and Antennas**

Introduction to distributed circuits, travelling and standing waves, reflection coefficient, SWR, impedance transformation, Smith charts. Introduction to transmission lines; coaxial, rectangular waveguide, resonators, optical fibers. Introduction to antennas; gain, directivity, effective area. Introduction to linear arrays.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3909.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4504 [0.5 credit]**Avionics Systems**

Electromagnetic spectrum. Air data sensing, display. Communications systems. Navigation and landing systems; ground-based, inertial and satellite systems. Airborne radar. Guidance, control for aircraft, autopilots; stability augmentation; active control; sensor requirements; display techniques. Aircraft power systems. Safety systems. Vehicle/systems integration, certification. Precludes additional credit for AERO 4504.

Prerequisite(s): fourth-year status in Engineering.

Not open to students in Electrical Engineering, Computer Systems Engineering, Engineering Physics or Communications Engineering.

Lecture three hours a week.

ELEC 4505 [0.5 credit]**Telecommunication Circuits**

A course of study of the commonly used circuit components in modern telecommunication systems. Both analog and digital systems are included. The design of the hardware is emphasized. Examples are drawn from broadcasting, telephony and satellite systems.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3509 and (SYSC 3501 or SYSC 3503).

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4506 [0.5 credit]**Computer-Aided Design of Circuits and Systems**

Basic principles of Computer-Aided Design tools used for analysis and design of communication circuits and systems. Frequency and time-domain analysis. Noise and distortion analysis. Transmission line effects. Sensitivity analysis and circuit performance optimization. Digital simulation.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4509 [0.5 credit]**Communication Links**

Fundamentals; decibel, intermodulation, 1dB compression, dynamic range, SNR, noise figure, noise temperature, antenna gain, EIRP, G/T. Line-of-sight links; receiver, diversity, fade margin. Satellite links; link calculations, multiple accessing, earth stations. Fiber links, fiber types, sources, detectors, systems.

Prerequisite(s): fourth-year status in Engineering or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 4600 [0.5 credit]**Radar and Navigation**

Radar: operation, minimum detectable signal, propagation effects. Surveillance Radars: Moving Target indicator and Pulse Doppler operation. Radio Navigation: pulsed and CW operation. Operational systems: Loran C., VOR/DME, TACAN, Global Positioning system. Inertial Navigation. Navigation Co-ordinate Systems. Techniques for determining best estimates of position.

Prerequisite(s): fourth-year status in Engineering or permission of the Department.

Lectures three hours a week, problem analysis 3 hours alternate weeks.

ELEC 4601 [0.5 credit]**Microprocessor Systems**

Interfacing aspects in microprocessor systems. Microprocessors and bus structures, internal architecture, instruction set and pin functions. Memory interfacing, input-output, interrupts, direct memory accesses, special processors and multiprocessor systems.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3006 (no longer offered), SYSC 3320, SYSC 3601.

Prerequisite(s): ELEC 2607 and one of SYSC 2003 or SYSC 3003 (no longer offered) or SYSC 3006 or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4602 [0.5 credit]**Electrical Power Systems**

The electric power system. Components: power transformers and connections, transmission lines. Analysis: balanced and unbalanced three-phase systems, symmetrical components, load flow, FACTS. Operation: frequency and voltage control, steady state and transient stability, fault protection. Distribution systems: utility, residential, commercial. Electrical safety: code, grounding/bonding.

Prerequisite(s): ELEC 2602.

Lectures three hours a week, problem analysis two hours a week.

ELEC 4609 [0.5 credit]**Integrated Circuit Design and Fabrication**

Introduction to nMOS IC design: static logic gates, noise margin, transmission gates, factors influencing switching speed, dynamic logic, input protection, output buffers, circuit simulation with SPICE. Laboratory work includes design and layout of a simple nMOS IC that is fabricated and returned for testing.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3500 or ELEC 3908.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4700 [0.5 credit]**The Physics and Modeling of Advanced Devices and Technologies**

Fabrication, operation and modeling of advanced devices for information technology. Topics: physics of materials, quantum mechanics of solids, optical transitions, physical analysis and models for state-of-the-art electronic/optical technologies and materials. Technologies: MOS and III-V based transistors, solid-state optical devices, MEMS and nano-technology based devices.

Prerequisite(s): ELEC 3908.

Lectures three hours a week, problem analysis two hours alternate weeks.

ELEC 4702 [0.5 credit]**Fiber Optic Communications**

Fundamentals of optoelectronics with application to fiber optic communications. Optical fibre: modes, losses, dispersion, splices, coupling to sources. Optical sources: LEDs, laser diodes. Optical detectors: photoconductor, pin and avalanche photodiodes. Optical receiver design. Fiber optic communications systems: intensity modulation/direct detection; coherent homodyne or heterodyne detection.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3908 and ELEC 3909.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4703 [0.5 credit]**Solar Cells**

Semiconductor band structure, photogeneration, the solar spectrum. Detailed analysis of monocrystalline silicon solar cells. Solar cells based on thin film materials: amorphous silicon, III-V materials, organics, titania-dye cells. Cells for concentrator systems. Photovoltaic power systems. Solar cells for building envelopes.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 2501 and ELEC 2507 and fourth-year status in Sustainable and Renewable Energy Engineering, or ELEC 2501 and ELEC 2507 and fourth-year status in Engineering with permission of the instructor.

Lectures three hours per week, laboratories/problem analysis three hours alternate weeks.

ELEC 4704 [0.5 credit]**Nanoscale Technology and Devices**

Engineering at the nanoscale. Quantum confinement and the effect of scale. Analysis tools: microscopy, spectroscopy. Fabrication: thin films, nanoparticles, nanotubes, graphene, organics. Structures and properties: quantum wells, nanocrystals, nanostructuring. Applications and devices: electronics, optoelectronics, photonics.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3908, ELEC 3909.

Lectures three hours a week, problem analysis 1.5 hours a week.

ELEC 4705 [0.5 credit]**Electronic Materials, Devices and Transmission Media**

Review of solid-state theory, conductors, semiconductors, superconductors, insulators, and optical and magnetic properties. Devices used in modern high speed electronic and communication systems: transistors, lasers, photodiodes, fiber optics, Josephson junctions. Implications of material properties on fabrication and operation of devices and circuits.

Precludes additional credit for ELEC 3908.

Prerequisite(s): fourth-year status in Engineering. Not available for credit to students in Electrical Engineering or Engineering Physics.

Lectures three hours a week.

ELEC 4706 [0.5 credit]**High-Speed Electronics: Circuits and Systems**

Challenges faced in designing high-speed electronic circuits and systems. Fundamentals of high-speed Tx/Rx architectures including: timing and HDL, PLL/DLL, Tx drivers, interface to photonic components, channel modelling, Rx channel, choice of modulation, equalization, clock and data recovery. VHDL hardware and CAD software laboratories.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3500.

Lectures three hours a week, laboratory three hours a week.

ELEC 4707 [0.5 credit]**Analog Integrated Electronics**

Emphasis on integration of analog signal processing techniques in monolithic IC technology. Continuous active filter design. MOS IC technology. OP amp design. Basic sampled data concepts; Z-transform analysis, switched capacitor filters. Noise aspects. Bipolar technology: radio frequency IC design.

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3509.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4708 [0.5 credit]**Advanced Digital Integrated Circuit Design**

Advanced Verilog, test benches. VLSI design based on CMOS technology, characteristics of CMOS logic circuits, cell libraries, building blocks, structured design, testing, Computer-Aided Design tools. Laboratory emphasis on design synthesis from Verilog.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering and ELEC 3500 or permission of the Department.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4709 [0.5 credit]**Integrated Sensors**

Overview of sensor technologies with emphasis on devices suitable for integration with silicon integrated circuits. Sensor design and fabrication principles including signal conditioning; discussion of automotive, biomedical, and other instrumentation applications.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4906 [0.5 credit]**Special Topics**

At the discretion of the Engineering Faculty Board, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical and Software Engineering and Engineering Physics may be offered.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4907 [1.0 credit]**Engineering Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): (ELEC 3907 or SYSC 3010), ECOR 3800, and fourth-year status in Engineering.

ELEC 4908 [1.0 credit]**Engineering Physics Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project approved for Engineering Physics. Lectures devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): ECOR 3800, and fourth-year status in Engineering. Certain projects may have additional prerequisites or corequisites.

Engineering Core (ECOR)

Engineering Core (ECOR) Courses**ECOR 1010 [0.5 credit]****Introduction to Engineering**

Technology, society and the environment. Graphical design communication: sketching, graphical projections; CAD. Managing data: statistical methods; spreadsheets. Design analysis: matrix programming software; symbolic computer algebra systems. Design process: proposals; reports; presentations; reporting software.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1000 (no longer offered), ECOR 1047, ECOR 1054.

Lectures four hours per week, laboratories two hours per week.

ECOR 1041 [0.25 credit]**Computation and Programming**

Software development as an engineering discipline, using a modern programming language. Language syntax and semantics. Tracing and visualizing program execution. Program style and documentation. Testing and debugging tools and techniques. Binary number system to represent data in a computer.

Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1042 [0.25 credit]**Data Management**

Software development using container data types (sequences, sets, maps) for data management. Modules. Data files. Incremental, iterative development of programs. Introduction to designing and implementing numerical algorithms.

Precludes additional credit for COMP 1005, COMP 1405, ECOR 1051, ECOR 1606, SYSC 1005.

Prerequisite(s): ECOR 1041 with a minimum grade of C- and MATH 1004 (may be taken concurrently). This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1043 [0.25 credit]**Circuits**

Electrical Quantities (Voltage, Charge, Current, Power). Conservation of charge and energy. Mathematical models of simple devices. Elementary circuit theory for passive elements. Thévenin's and superposition theorem. Signal filtering and amplification. Time and frequency domain. Circuit design and simulation.

Precludes additional credit for ECOR 1052.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1044 [0.25 credit]**Mechatronics**

Mechatronics applications. Analog to digital signal conversion. Control systems and PID controllers. Input devices, including sensors. Data collection and processing. Output devices, including displays, actuators, and motors. Project design and economics. Environmental Impact of mechatronics engineering. System failures and failsafe design.

Precludes additional credit for ECOR 1052.

Prerequisite(s): ECOR 1041 with a minimum grade of C- and ECOR 1043 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1045 [0.25 credit]**Statics**

Cartesian vector representation of forces. Components of forces. Particle equilibrium and free body diagrams. Moments and cross product. Centre of gravity and centroids. Rigid body equilibrium.

Precludes additional credit for ECOR 1053, ECOR 1101.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1046 [0.25 credit]**Mechanics**

2D truss analysis (method of joints/sections). Normal stress/strain and shear stress/strain. 2D frames and machines. Internal loads - normal, shear and moment at a point. Shear and moment diagrams.

Precludes additional credit for ECOR 1053.

Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1047 [0.25 credit]**Visual Communication**

Graphs and sketches, flow charts, block diagrams. Visual presentation, projection and perspectives of objects.

3D sketching. Free hand drawing. Reading engineering drawings and schematics. Introduction to scaling, dimensioning and tolerancing. Introduction to CAD.

Precludes additional credit for ECOR 1054, ECOR 1010.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1048 [0.25 credit]**Dynamics**

Kinematics and kinetics of a particle. Principle of work and energy. Conservation of energy, conservative forces, potential energy. Principles of impulse and momentum, conservation of momentum for a system of particles.

Precludes additional credit for ECOR 1054, ECOR 1101.

Prerequisite(s): ECOR 1045 with a minimum grade of C-. This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1051 [0.5 credit]**Fundamentals of Engineering I**

Software development as an engineering discipline, using a modern programming language. Tracing and visualization of program execution. Testing and debugging. Data management: digital representation of numbers; numerical algorithms; storing data in files; container data types: sequences, sets, maps.

Includes: Experiential Learning Activity
Precludes additional credit for COMP 1005, COMP 1405, ECOR 1041, ECOR 1042, ECOR 1606, SYSC 1005.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1052 [0.5 credit]**Fundamentals of Engineering II**

Electrical Quantities. Conservation of mass and energy. Mathematical models of simple devices. Elementary circuit theory for passive elements. Signal filtering and amplification. Time and frequency domain. Circuit design and simulation. Digital and analog signals. Mechatronics applications. Output devices. System failures and failsafe design.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1043, ECOR 1044.

Prerequisite(s): ECOR 1051 (may be taken concurrently).

Lectures three hours per week, laboratories three hours per week.

ECOR 1053 [0.5 credit]**Fundamentals of Engineering III**

Components of forces. Particle equilibrium and free body diagrams. Moments and cross product. Centre of gravity and centroids. Rigid body equilibrium. 2D Truss analysis (method of joints/sections). Normal stress/strain and Shear stress/strain. 2D frames and machines.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1045, ECOR 1046, ECOR 1101.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures three hours per week, laboratories three hours per week.

ECOR 1054 [0.5 credit]**Fundamentals of Engineering IV**

Engineering drawings and schematics. Graphs and sketches, flow charts, block diagrams. Computer-assisted design. Kinematics/Kinetics of a particle. Principles of work and energy. The Engineering Profession and Act. Organization and time management. Project management. Business, entrepreneurship and intellectual property.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1010, ECOR 1047, ECOR 1048.

Prerequisite(s): ECOR 1053 (may be taken concurrently).

Lectures three hours per week, laboratories three hours per week.

ECOR 1055 [0.0 credit]**Introduction to Engineering Disciplines I**

Overview of professional activities oriented to the student's discipline of study: Architectural Conservation and Sustainability. Civil and Environmental. Aerospace and Mechanical. Electrical. Engineering Physics. Computer Systems, Communications and Software. Biomedical (Electrical and Mechanical). Sustainable and Renewable Energy.

Prerequisite(s): This course may not be taken concurrently with ESLA 1300 or ESLA 1500.

Lectures 1.5 hours per week.

ECOR 1056 [0.0 credit]**Introduction to Engineering Disciplines II**

Selected lectures designed to provide students with exposure to the breadth of Engineering disciplines.

Online course.

ECOR 1057 [0.0 credit]**Engineering Profession**

Professional Engineers Act. Engineering documentation.

History of the profession. Engineering practice: system

life cycle, practice within the discipline, designing with

others. Health and safety. Engineering Ethics, Equity

and Diversity. Introduction to engineering law : Business,

Entrepreneurship and Intellectual Property.

Online course

ECOR 1101 [0.5 credit]**Mechanics I**

Introduction to mechanics. Scalars and vectors.

Concurrent forces: resultant and components. Statics of

particles. Moments and couples. Force system resultants.

Rigid body equilibrium. Frames and machines. Internal

forces. Kinematics and kinetics of particles. Conservation

theorems: work-energy; impulse-momentum. Centroids

and centres of gravity.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1045, ECOR 1048,

ECOR 1053.

Prerequisite(s): MATH 1004 and MATH 1104.

Lectures three hours a week, tutorials and problem

analysis three hours a week.

ECOR 1606 [0.5 credit]**Problem Solving and Computers**

Introduction to engineering problem solving. Defining

and modeling problems, designing algorithmic solutions,

using procedural programming, selection and iteration

constructs, functions, arrays, converting algorithms

to a program, testing and debugging. Program style,

documentation, reliability. Applications to engineering

problems; may include numerical methods, sorting and

searching.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 1005, SYSC 1100

(no longer offered), SYSC 1102 (no longer offered),

COMP 1005, COMP 1405, ECOR 1041, ECOR 1042,

ECOR 1051.

Lectures three hours a week, laboratory three hours a

week.

ECOR 2050 [0.5 credit]**Design and Analysis of Engineering Experiments**

Statistics and the design of engineering experiments. Basic exploratory data analysis. Central limit theorem. Hypothesis testing: t-test, chi-square test, type-I and type-II errors, multiple-comparison problem. Statistical bias. Design of experiments: randomization, blocking and replication, randomized blocking designs, factorial design. Statistical software packages.

Includes: Experiential Learning Activity

Prerequisite(s): 2nd Year Status in Engineering.

Lectures three hours a week, problem analysis and laboratory three hours a week.

ECOR 2606 [0.5 credit]**Numerical Methods**

Numerical algorithms and tools for engineering and problem solving. Sources of error and error propagation, solution of systems of linear equations, curve fitting, polynomial interpolation and splines, numerical differentiation and integration, root finding, solution of differential equations. Software tools.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2606 (no longer offered).

Prerequisite(s): MATH 1005 and (ECOR 1606 or SYSC 1005) and (ECOR 1010 or ELEC 1908).

Lectures three hours a week, laboratory one hour a week.

ECOR 2995 [0.0 credit]**Engineering Portfolio**

Students will be asked to reflect on their skills, strengths and weaknesses as preparation for the professional practice course. Engineering students must submit samples of their writing and communications (including, for example, laboratory reports and professional memos).
Online

ECOR 3800 [0.5 credit]**Engineering Economics**

Introduction to engineering economics; cash flow calculations; methods of comparison of alternatives; structural analysis; replacement analysis; public projects; depreciation and income tax; effects of inflation; sensitivity analysis; break-even analysis; decision making under risk and uncertainty.

Prerequisite(s): third-year status in Engineering or (ECOR 1051, ECOR 1052, ECOR 1053 and ECOR 1054).

Lectures three hours a week.

ECOR 4907 [1.0 credit]**Multidisciplinary Engineering Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in an approved major multidisciplinary engineering design project. Lectures devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and comprehensive final report are required.

Includes: Experiential Learning Activity

Precludes additional credit for CIVE 4918, ELEC 4907, ELEC 4908, ENVE 4918, MAAE 4907, SREE 4907, SYSC 4907, SYSC 4917, SYSC 4927, SYSC 4937.

Prerequisite(s): (ECOR 3800 or SYSC 4106), fourth-year status in Engineering and Permission of the faculty.

ECOR 4995 [0.5 credit]**Professional Practice**

Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized.

Precludes additional credit for MAAE 4905, CIVE 4905, SYSC 3905 or ELEC 3905 (all no longer offered).

Prerequisite(s): ECOR 2995 and fourth-year status in Engineering.

Lectures three hours a week.

English (ENGL)

English (ENGL) Courses**ENGL 1002 [0.5 credit]****Writing and Language I**

The first half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program.

Includes: Experiential Learning Activity

Precludes additional credit for ENGL 1005 (no longer offered).

Lectures and workshop three hours a week.

ENGL 1003 [0.5 credit]**Writing and Language II**

The second half of an introduction to the principles, styles, and structures of effective writing, including essay writing. Course offered only in Nunavut as part of Certificate in Nunavut Public Service Studies Program.

Includes: Experiential Learning Activity

Precludes additional credit for ENGL 1005 (no longer offered).

Prerequisite(s): ENGL 1002.

Lectures and workshop three hours a week.

ENGL 1008 [0.5 credit]**English Grammar: Fundamentals**

A practical and intensive overview of English grammar designed for students who want to improve their understanding of grammar for their own writing and reading. This is not an ESL course.

Lectures three hours a week.

ENGL 1009 [0.5 credit]**Literature in Global Context**

Introduction to the study of literature from a global perspective. Students will be exposed to writers from various locations and to methods for studying literature across national boundaries.

Lecture three hours a week.

ENGL 1010 [0.5 credit]**Writing Essays about Literature**

An intensive writing course focusing on the formulation and construction of a literary essay.

Precludes additional credit for ENGL 1020.

Lectures three hours a week.

ENGL 1020 [0.5 credit]**Effective Writing**

The rhetorical principles, skills, and structures necessary for the kind of writing done at the university level. Clear and effective composition as a mode of research, discovery, analysis, and persuasion. Students pursuing the English major or minor should take ENGL 1010 instead of ENGL 1020.

Precludes additional credit for ENGL 1010.

Lectures three hours a week.

ENGL 1100 [0.5 credit]**Literature, Law, and Criminality**

An introductory course whose readings focus on the intersections between literature, law, and criminality. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.

Lecture three hours a week.

ENGL 1200 [0.5 credit]**Literature, Science, and Technology**

An introductory course whose readings focus on the intersections between literature, science, and technology. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1300, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.

Lectures three hours a week.

ENGL 1300 [0.5 credit]**Literature, Psychology, and the Mind**

An introductory course whose readings focus on the intersections between literature, psychology, and the mind. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1400, ENGL 1600, ENGL 1700, FYSM 1004.

Lectures three hours a week.

ENGL 1400 [0.5 credit]**Literature, Art, and Culture**

An introductory course whose readings focus on the intersections between literature, art, and culture. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1600, ENGL 1700, FYSM 1004.

Lectures three hours a week.

ENGL 1500 [0.5 credit]**Introduction to Creative Writing**

An introduction to the practice of creative writing, focusing on poetry, the short story, creative non-fiction, and drama. Emphasis is also placed on contextualizing creative writing as an academic discipline, a mode of self-expression, and a professional industry.

Includes: Experiential Learning Activity

Lectures and workshops three hours a week.

ENGL 1600 [0.5 credit]**Literature and Magic**

An introductory course whose readings focus on the intersections between literature and magic. Topics will vary. Consult the English Department website for the current topic.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1700, FYSM 1004.

Lecture three hours a week.

ENGL 1609 [0.5 credit]**Introduction to Drama Studies**

An introduction to drama studies, combining attention to theatre history, conventions, and devices, with attention to theatrical practice, and interpretation of selected dramatic texts. Students will develop a vocabulary for speaking and writing with confidence about theatrical productions, theatre practice, and dramatic texts.

Lecture three hours a week.

ENGL 1700 [0.5 credit]**Climate Change and the Humanities**

An introduction to literature and culture in the context of the environmental humanities and climate change.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, FYSM 1004.

Seminar or lecture three hours a week.

ENGL 2005 [0.5 credit]**Theory and Criticism**

An introduction to theories and methods of literary analysis. Through the study of literature, theory, and criticism, students will explore disciplinary history, critical terms, textual analysis, and research methods.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2008 [1.0 credit]**Myth and Symbol**

A literary study of myths and symbols from oral traditions to contemporary forms through selected interdisciplinary and theoretical approaches.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2011 [0.5 credit]**Children's Literature**

An introduction of the critical study of children's literature. Also listed as CHST 2011.

Precludes additional credit for ENGL 2006 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2012 [0.5 credit]**Greek and Roman Epic**

An examination of the genre of epic in Greco-Roman antiquity, including a close reading of translations of Homer and Vergil.

Also listed as CLCV 2008.

Precludes additional credit for CLCV 2009, ENGL 2009.

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

ENGL 2100 [0.5 credit]**Topics in Popular Culture**

Study of a selected topic related to popular culture.

Precludes additional credit for ENGL 2101 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2103 [0.5 credit]**Introduction to the Novel**

A historical and critical study of the novel.

Precludes additional credit for ENGL 2003 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2104 [0.5 credit]**Drama Workshop**

A course dealing with the rudiments of theatrical performance: voice, movement, improvisation, interpretation. Exercises are based upon examples drawn from classical and contemporary repertoires.

Includes: Experiential Learning Activity

Precludes additional credit for ENGL 2000 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Workshop three hours a week.

ENGL 2105 [0.5 credit]**History of the English Language**

A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions.

Also listed as LING 2802.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2106 [0.5 credit]**Topics in Popular Fiction**

An introduction to the critical study of popular fiction.

Topics will vary but may include popular narrative forms such as fantasy, horror, mystery, romance, Young Adult (YA) fiction, etc.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2107 [0.5 credit]**Science Fiction**

A study of the history and traditions of science fiction, speculative fiction, fantasy, and utopia, covering various periods, nationalities, genres, and/or media.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2108 [0.5 credit]**Women and Literature**

Representations of women and the construction of femininity in selected literary texts, the position of women as readers and authors, and the impact of feminist criticism on literary analysis.

Precludes additional credit for ENGL 2902 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2109 [0.5 credit]**Gender, Sexuality and Literature**

How literature represents, reproduces, and resists cultural notions of gender and sexuality. Topics may include: gender and sexuality in relation to literary history, production, and reception; literature by/about "deviant" or subcultural sexualities and genders.

Precludes additional credit for ENGL 2902 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2200 [0.5 credit]**Creativity, Imagination, and Writing**

This course not only surveys theories about the imagination and creativity but also teaches various rhetorical exercises and strategies for sparking inventive thinking and new ideas to fire the writing process. Consult the English Department's website for detailed information.

Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.

Lectures three hours a week.

ENGL 2201 [0.5 credit]**The Pleasures of Reading**

This course introduces majors and non-majors to a selection of known and unknown "masterpieces." Texts may be grouped to explore specific themes. Requirements include a variety of assignments but no formal essay. Consult the English Department's website for detailed information.

Prerequisite(s): second-year standing or permission of the department. Students in English may take this course only as a free elective.

Lectures three hours a week.

ENGL 2202 [0.5 credit]**Weird Fiction**

Introduction to a sub-category of speculative fiction that spans from traditional ghost stories and tales of the macabre to the "New Weird": contemporary writing that overthrows the clichés, conventions, and expectations of fantasy, horror, and science fiction.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2301 [0.5 credit]**Literatures and Cultures 500-1500**

A study of the period between 500 and 1500, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 2300 (no longer offered).

Prerequisite(s): Second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2302 [0.5 credit]**Literatures and Cultures 1500-1700**

A study of the period between 1500 and 1700, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 2300 (no longer offered).

Prerequisite(s): Second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2400 [0.5 credit]**Introduction to Digital Humanities**

An introduction to the principal debates in and approaches to the Digital Humanities.

Also listed as DIGH 2001.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2401 [0.5 credit]**Digital Humanities: Theory and Method**

A multidisciplinary survey of core theories, methodologies and tools within the Digital Humanities. Assignments will include collaborative work and applied projects.

Includes: Experiential Learning Activity

Also listed as DIGH 2002.

Prerequisite(s): second-year standing or permission of the department.

Lecture and workshop three hours a week.

ENGL 2500 [0.5 credit]**Classical Mythology**

A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth.

Also listed as CLCV 2500.

Precludes additional credit for ENGL 2007/CLCV 2000 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

ENGL 2600 [0.5 credit]**History of World Cinema I**

Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations.

Also listed as FILM 2606.

Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120 or a 1000-level English course, and second-year standing, or permission of the discipline.

Lecture and screening three hours a week, lecture one hour a week.

ENGL 2601 [0.5 credit]**History of World Cinema II**

Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations.

Also listed as FILM 2607.

Precludes additional credit for ENGL 2608 (no longer offered) and FILM 2608 (no longer offered).

Prerequisite(s): ENGL 2600 or FILM 2606 or permission of the department.

Lecture and screening three hours a week, lecture one hour a week.

ENGL 2605 [0.5 credit]**Greek and Roman Drama**

An examination of the genres of tragedy and comedy in Greco-Roman antiquity.

Also listed as CLCV 2010.

Precludes additional credit for CLCV 2009, ENGL 2009.

Prerequisite(s): second year standing or permission of the unit.

Lecture three hours a week.

ENGL 2609 [0.5 credit]**Drama: Modes and Movements**

A study of dramatic texts and traditions, offering attention to major dramatic modes and movements such as Ritual, Dance, Naturalism, Expressionism, Absurdism, Political Theatre, Feminist Theatre, and Global/Intercultural Theatre. Each will be investigated in the context of performance videos, live performances, and/or written text.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2700 [0.5 credit]**American Literatures I**

Introduction to the traditions of American literature through 1865.

Precludes additional credit for ENGL 2702 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2701 [0.5 credit]**American Literatures II**

Introduction to the traditions of American literature after 1865.

Precludes additional credit for ENGL 2702 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2709 [0.5 credit]**Indigenous Drama**

A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors, and other practitioners.

Also listed as INDG 2709.

Prerequisite(s): second-year standing, or permission of the Department.

Lectures three hours a week.

ENGL 2730 [0.5 credit]**Culture and Climate Change**

Selected topics related to climate change and cultural studies.

Prerequisite(s): second-year standing or permission of the department.

Lecture three hours a week.

ENGL 2802 [1.0 credit]**Indigenous and Canadian Literatures**

A survey of Canadian literary cultures in English from their beginnings to the present that frames them in the wider context of Indigenous writing and storytelling. This course is writing-attentive.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2900 [0.5 credit]**Literature of the Self**

A study of developments in the literary representation of the self. The course considers a wide range of major texts from the Middle Ages to the present.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2901 [0.5 credit]**Writing Poetry**

A workshop involving regular assignments in writing poetry and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

Workshop three hours a week.

ENGL 2903 [0.5 credit]**Writing Fiction**

A workshop involving regular assignments in writing prose fiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

Workshop three hours a week.

ENGL 2906 [0.5 credit]**Culture and Society**

A study of literature in relation to its social and political contexts. Topics and periods vary.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2908 [0.5 credit]**Celtic Literatures**

The literatures of Ireland, Scotland, and/or Wales. Topics will vary in national and historical scope and may be organized by theme, author, and/or genre.

Precludes additional credit for ENGL 2602 and ENGL 2606 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2910 [0.5 credit]**Book Arts Workshop**

This experiential learning course immerses students in the practical arts and histories of book production.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing or permission of the department.

Workshop three hours a week.

ENGL 2915 [0.5 credit]**Writing Creative Nonfiction**

A workshop involving regular assignments in reading and writing creative nonfiction and practical criticism based on this work. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

Workshop three hours a week.

ENGL 2920 [0.5 credit]**Topics in Decolonization and Migration I**

An introduction to the study of literature and culture in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.

Prerequisite(s): Second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2926 [0.5 credit]**African Literatures I**

An introductory survey of modern African literatures, discourses, and cultural production in the first half of the 20th century.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2927 [0.5 credit]**African Literatures II**

A survey of modern African literatures, discourses, and cultural production from the era of political independence from colonialism (the 1960s) to the present.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2936 [0.5 credit]**South Asian Literatures I**

An introductory historical survey of the literatures of South Asia to the early colonial era, starting with the Indian epics and concluding with literary traditions of 18th-century India.

Precludes additional credit for ENGL 2502 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2937 [0.5 credit]**South Asian Literatures II**

An introductory survey of literatures of South Asia from the colonial and postcolonial eras. Topics include the nationalist movement, neo-colonialism, and post-colonialism.

Precludes additional credit for ENGL 2502 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2956 [0.5 credit]**Literatures of the Americas I**

Introduction to comparative and transnational approaches to the literatures and oratures of the Caribbean, and North and South America, with emphasis on the pre-colonial and colonial eras.

Precludes additional credit for ENGL 2909 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 2957 [0.5 credit]**Literatures of the Americas II**

Introduction to comparative and transnational approaches to 20th- and 21st-century writing from the Caribbean, and North and South America.

Precludes additional credit for ENGL 2909 (no longer offered).

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

ENGL 3003 [0.5 credit]**Literatures in Translation**

A study of non-English literatures in translation with a special focus on cultural and historical contexts.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3007 [0.5 credit]**Reading Poetry**

This course is designed to enable students to develop skills in reading and writing about poetry. Readings will be chosen from a variety of authors, periods, and/or genres.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3008 [0.5 credit]**Studies in Greek Literature**

A study of an author or topic in Greek literature. Contents of this course vary from year to year.
Also listed as CLCV 3701.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

ENGL 3009 [0.5 credit]**Studies in Roman Literature**

A study of an author or topic in Roman literature.
Also listed as CLCV 3702.
Prerequisite(s): 1.0 credit in CLCV courses (or equivalent) at second year level or permission of the unit. Permission of the unit is required to repeat this course.
Lecture three hours a week.

ENGL 3010 [0.5 credit]**The Secret Lives of Poems**

This course is designed to enable students to develop skills in reading and writing about great works of poetry. Course requirements will feature a combination of creative and critical exercises, but no formal essay.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3011 [0.5 credit]**Comics and Graphic Novels**

An introduction to the critical study of comic books and graphic narrative.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3105 [0.5 credit]**History of Literary Theory**

Introduction to ideas about literature, aesthetics, authorship, and readership as these have circulated in periods before the twentieth century.
Precludes additional credit for ENGL 3000 (no longer offered), and ENGL 3001 (no longer offered).
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3106 [1.0 credit]**Theories and Critical Practices**

This course offers students an interdisciplinary foundation in cultural, critical, and literary theories and practices. This course is writing attentive.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3200 [0.5 credit]**Topics in Medieval Literature**

A study of selected topics and texts from medieval literature.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3201 [1.0 credit]**European Literature**

Major movements and works from Dante's Divine Comedy through Voltaire's *Candide*. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.
Also listed as HUMS 3200.
Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program for Humanities Students. English students should have third year standing with a CGPA of 8.0 or higher.
Lectures three hours a week.

ENGL 3202 [0.5 credit]**Chaucer**

A study of Chaucer's works including some attention to the Middle English language in which he wrote.
Prerequisite(s): third-year standing or permission of the department.
Lectures three hours a week.

ENGL 3204 [0.5 credit]**Literary Representations of Childhood and Youth**

An examination of the ways in which childhood, children, and youth have been represented in creative literature (fiction, poetry, drama, and/or creative nonfiction).
Also listed as CHST 3204.
Prerequisite(s): third-year standing.
Lecture three hours a week.

ENGL 3305 [0.5 credit]**Shakespeare and the Stage**

Introduction to the study of early modern play-texts written by Shakespeare and/or his contemporaries.

Precludes additional credit for ENGL 3304 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3306 [0.5 credit]**Shakespeare and Film**

A study of film adaptations of selected plays by Shakespeare.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3401 [0.5 credit]**The Book in the Digital Age**

A multidisciplinary course focused on the social, economic and political dimensions of the book in its manuscript, print and digital forms.

Also listed as DIGH 3001.

Prerequisite(s): third-year standing, or permission of the English Department.

Lecture three hours a week.

ENGL 3402 [0.5 credit]**18th-Century Literature**

A detailed study of authors and movements of the period 1660 to 1780.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3414 [0.5 credit]**Introduction to Professional Writing and Editing**

The fundamental skills of professional writing and editing, including writing for specific audiences, document design, revision strategies, copyediting.

Also listed as ALDS 3414.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week.

ENGL 3500 [0.5 credit]**Literatures and Cultures 1700-1900**

A study of the period between 1700 and 1900, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 3502 (no longer offered).

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3501 [0.5 credit]**Literatures and Cultures 1900-Now**

A study of the period between 1900 and the present, with attention to cultural, historical, geographical, and literary contexts.

Precludes additional credit for ENGL 3502 (no longer offered).

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3553 [0.5 credit]**The 19th-Century Novel**

A study of the English novel in the 19th century.

Precludes additional credit for ENGL 3503 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3601 [0.5 credit]**20th- and 21st-Century Poetry**

A study of 20th and 21st-century poetry in English. Topics and authors may vary.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3603 [0.5 credit]**20th- and 21st-century Fiction**

A study of 20th- and 21st-century fiction in English. Topics and authors may vary.

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3605 [0.5 credit]**Modern and Contemporary Literary Theory**

Introduction to contemporary approaches to literary texts, such as formalist, structuralist, deconstructive, psychoanalytic, Marxist, historicist, and feminist. Topics may include: the nature and role of literature, of author and reader, of canons, ideology, gender, sexuality, and race. Precludes additional credit for ENGL 3002 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3608 [0.5 credit]**Topics in Theatre Management**

A workshop taught by practitioners in the community that provides students with the knowledge and skills necessary to create, manage, and sustain theatre projects. Topics will vary but may include the development of children's theatre or the operation of a festival or touring company. Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Workshop three hours a week.

ENGL 3609 [0.5 credit]**Drama: Contemporary Performance**

A study of dramatic texts and performance practices in contemporary professional theatre. Topics vary according to the season programs of professional theatre in Ottawa. Students will attend a number of productions, determined by the instructor. Field trip fees will apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3702 [0.5 credit]**American Culture**

A study of American writing in its cultural and historical contexts.

Precludes additional credit for ENGL 3703 (no longer offered).

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3801 [0.5 credit]**Canadian Poetry**

A study of Canadian poetry in its social and political contexts.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

ENGL 3803 [0.5 credit]**Canadian Fiction**

A study of Canadian fiction in its social and political contexts.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

ENGL 3804 [0.5 credit]**Literature and Culture in Europe**

A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society.

Also listed as EURL 3001.

Prerequisite(s): second year standing.

Lecture and discussion three hours a week.

ENGL 3805 [0.5 credit]**Literature and Culture in Russia and Eurasia**

A survey of the literature and cultural texts that have defined Russian and neighbouring Slavic countries. Examination of fiction and non-fiction texts that have contributed to and reflected the development of Russian and Slavic culture and society.

Also listed as EURL 3002.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

ENGL 3902 [0.5 credit]**Writing Screenplays**

An intermediate workshop involving regular assignments in writing for film. Permission to register in this course requires the student to submit a writing sample.

Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Also listed as FILM 3902.

Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.

Workshops three hours a week.

ENGL 3903 [0.5 credit]**Writing Fiction (Intermediate)**

An intermediate workshop involving regular assignments in writing prose fiction and practical criticism. Permission to register in this course requires the student to submit a writing sample. Instructions can be found at carleton.ca/english.

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.

Workshop three hours a week.

ENGL 3904 [0.5 credit]**Intermediate Drama Workshop**

A course dealing with techniques of characterization, principles of ensemble performance, scene analysis for actors and directors, styles of performance.

Includes: Experiential Learning Activity

Precludes additional credit for ENGL 2001 (no longer offered).

Prerequisite(s): ENGL 2104 or permission of the Department.

Workshop three hours a week.

ENGL 3905 [0.5 credit]**Topics in Performance**

A study of selected elements of performance. Topics will vary but may include such areas as the theory and practice of comic timing on stage or movement on stage space.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Lecture and workshop three hours a week.

ENGL 3906 [0.5 credit]**Writing Popular Fiction**

An intermediate workshop in creative writing that focuses on the development of writing skills specific to the crafting of narratives in such genres as Speculative Fiction, Young Adult Fiction, and Historical Fiction. Permission to register requires the student to submit a writing sample.

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level creative writing workshop and permission of the instructor.

Workshop three hours a week.

ENGL 3908 [0.5 credit]**Research and Theory in Academic Writing**

Study of contemporary research and theory (1970s to present) on academic writing in elementary, secondary and post-secondary school, with emphasis on writing in university. Consideration of what academic writing entails, how writing fosters learning, and how instruction can help students develop their writing abilities.

Includes: Experiential Learning Activity

Also listed as ALDS 3401.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ENGL 3909 [0.5 credit]**Research and Theory in Workplace Writing**

Study of contemporary research and theory (1980s to present) in writing in workplace settings. Consideration of how writing is used in accomplishing work, how novices learn to write effectively, and what the implications are for pedagogy.

Includes: Experiential Learning Activity

Also listed as ALDS 3402.

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ENGL 3910 [0.5 credit]**From Degree to Career**

This experiential-learning course prepares students in English for their transition into the workplace. Project-based activities (including readings and research) and guest speakers will teach students to identify, develop, and apply the skills and knowledge gained from a degree in English studies.

Includes: Experiential Learning Activity

Prerequisite(s): Third-year standing or permission of the department.

Lectures and workshops three hours a week.

ENGL 3911 [0.5 credit]**Cultural Studies**

This course explores cultural expression across diverse media, theorizing culture as a form of struggle that shapes material conditions, fuels knowledge production, and informs lived experience.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3915 [0.5 credit]**Special Topics in Writing**

An intermediate workshop that involves regular creative writing assignments and practical criticism based on this work. Topics will vary. Permission to register requires the student to submit a writing sample. Submission instructions and yearly special topics can be found at carleton.ca/english/.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, a 2000-level creative writing workshop, and permission of the instructor.

Workshop three hours a week.

ENGL 3916 [0.5 credit]**Spoken Word Poetry Workshop**

This intermediate-level workshop-based course explores traditions of spoken word poetry while requiring students to create and perform their own spoken word poems.

Includes: Experiential Learning Activity

Also listed as AFRI 3916.

Prerequisite(s): third-year standing or a 2000-level writing workshop and permission of the instructor.

Workshops three hours a week.

ENGL 3920 [0.5 credit]**Literary Ecological Fieldwork**

This interdisciplinary, experiential fieldwork course brings together literature, culture, and ecology studies. At least 50% of class periods will be devoted to short field work excursions in the Ottawa region. These excursions will be complemented by classroom discussion time. Field trip fees will apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or permission of the department.

Field work and lectures three hours a week.

ENGL 3930 [0.5 credit]**Topics in Decolonization and Migration II**

An intermediate study of literature, culture, and research in the context of topics such as empire and decolonization, diaspora, migration and globalization, race, and ethnicity. Themes, authors, and geographical and temporal focus will vary.

Prerequisite(s): Third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3940 [0.5 credit]**Studies in Diaspora Lit.**

A study of diaspora literatures and cultures.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3960 [0.5 credit]**Studies in Indigenous Literature**

A study of Indigenous literatures and cultures.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3965 [0.5 credit]**Intro to Postcolonial Theory**

A survey of major concepts and key figures in postcolonial theory.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3972 [0.5 credit]**Studies in Postcolonial Literature**

A study of postcolonial literatures and cultures. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

ENGL 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ENGL 4001 [0.5 credit]**Studies in Poetry**

A study of a selected topic in poetry.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4003 [0.5 credit]**Studies in the Novel**

A study of a selected topic in the novel.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4004 [0.5 credit]**Writing and Knowledge-Making in the Professions**

The role of writing in constructing knowledge in the professions, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different professions shape their writing in distinctive ways and what implications this holds for theory, research, and practice.

Includes: Experiential Learning Activity

Also listed as ALDS 4404.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week.

ENGL 4005 [0.5 credit]**Studies in Literary Theory**

Study of a selected topic in literary theory and criticism. Precludes additional credit for ENGL 4000 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4105 [0.5 credit]**Old English**

Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.

Also listed as LING 4805.

Precludes additional credit for ENGL 3102 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4115 [0.5 credit]**Culture and the Text**

Topics will vary from year to year.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4125 [0.5 credit]**Digital Culture and the Text I**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as DIGH 4002.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.

Seminar or lecture three hours a week.

ENGL 4135 [0.5 credit]**Studies in Publishing**

Topics will vary from year to year.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4145 [0.5 credit]**Digital Culture and the Text II**

A study of new developments in digital media and culture, and how they affect our understanding of literary modes, genres and textuality, including notions of authorship and reading strategies. Topics will vary from year to year.

Also listed as DIGH 4003.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the Department.

Seminar or lecture three hours a week.

ENGL 4155 [0.5 credit]**Studies in Digital Humanities**

A study of current issues and debates in the Digital Humanities.

Also listed as DIGH 4001.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.

Seminar or lecture three hours a week.

ENGL 4208 [0.5 credit]**Studies in Medieval Literature**

A study of a selected topic in Medieval literature; requires previous experience reading medieval English.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4301 [0.5 credit]**Studies in Renaissance Literature**

A study of a selected topic in Renaissance literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4401 [0.5 credit]**Studies in 18th-Century Literature**

A study of a selected topic in Restoration or 18th-century literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4404 [0.5 credit]**Digital Humanities Workshop**

This workshop will provide students with the opportunity to complete an individual or collaborative capstone project in the Digital Humanities.

Includes: Experiential Learning Activity

Also listed as DIGH 4004.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.

Workshop three hours a week.

ENGL 4405 [0.5 credit]**Digital Humanities Practicum**

Practical experience gained by working on projects under the supervision of the staff of a participating public- or private-sector institution or organization, including a final written assignment or equivalent project. A maximum of 1.0 practicum credit may be applied towards degree requirements.

Includes: Experiential Learning Activity

Also listed as DIGH 4005.

Prerequisite(s): ENGL 2401 and fourth-year standing, or permission of the English Department.

Practicum.

ENGL 4414 [0.5 credit]**Professional Writing I**

The role of writing in government and NGOs.

Consideration of various genres, practices and styles of government and NGO writing, including grant proposals, administrative reports, press releases, briefing notes, recommendation reports.

Includes: Experiential Learning Activity

Also listed as ALDS 4414.

Prerequisite(s): third-year standing or permission of the instructor.

Seminar three hours a week. May include a work placement.

ENGL 4415 [0.5 credit]**Professional Writing II**

The role of writing in science-related fields and in the health professions. Consideration of various genres, practices and styles of scientific and health-related writing, including research reports, grant proposals, case reports, popularizations of science, press releases.

Includes: Experiential Learning Activity

Also listed as ALDS 4415.

Prerequisite(s): third-year standing or permission of the instructor.

Seminars three hours a week. May include a work placement.

ENGL 4500 [0.5 credit]**Studies in Romanticism**

A study of a selected topic, 1770-1830.

Precludes additional credit for ENGL 4407 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4515 [0.5 credit]**Teaching Writing in School and the Workplace**

Introduction to approaches for teaching writing in elementary and secondary school, in university, and in the workplace, with a focus on socio-cultural theories of language and learning. Discussion of applications of these approaches to classroom and workplace teaching.

Includes: Experiential Learning Activity

Also listed as ALDS 4405.

Prerequisite(s): third-year standing, or permission of the instructor.

Seminar three hours a week.

ENGL 4550 [0.5 credit]**Studies in Victorian Literature**

A study of a selected topic in 19th-century British literature, 1830-1900.

Precludes additional credit for ENGL 4501 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4600 [0.5 credit]**The Great Russian Novel**

A study of masterpieces of the Russian tradition, to be selected from among works by writers such as Tolstoy, Dostoevsky, Gogol, Turgenev, Bely, Bulgakov, and Nabokov. All novels will be read in English translation.

Also listed as EURR 4103.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4601 [0.5 credit]**Studies in Contemporary Poetry**

A comparative and transnational approach to 20th- and 21st-century poetry.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4605 [0.5 credit]**Theatre Production Seminar**

This course offers students advanced engagement with the theory and application of theatrical crafts and includes participation in a writing, acting, or technical capacity on a class production.

Includes: Experiential Learning Activity

Prerequisite(s): ENGL 3904 or permission of the department.

Seminar three hours a week.

ENGL 4607 [0.5 credit]**Studies in 20th- and 21st-century Literature**

A study of a selected topic in literature of the 20th and 21st century.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4609 [0.5 credit]**Global Stages and Theories**

An advanced study of dramatic texts from transnational, postcolonial, or European contexts. This course will offer sustained attention to specific theatre traditions, theatrical practice, and interpretation of texts. Topics and points of emphasis vary from year to year.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4708 [0.5 credit]**Studies in American Literature I**

A study of a selected topic in American literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4709 [0.5 credit]**Studies in American Literature II**

A study of a selected topic in American literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4802 [0.5 credit]**Race, Ethnicity and Canadian Lit.**

A study of Canadian literature that engages with notions of race and ethnicity.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4806 [0.5 credit]**Studies in Canadian Literature I**

A study of a selected topic in Canadian literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4807 [0.5 credit]**Studies in Canadian Literature II**

A study of a selected topic in Canadian literature.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4908 [1.0 credit]**Independent Study**

Independent research and writing, under the supervision of English faculty, requiring an essay of approximately 10,000 words. A written proposal outlining the project must be submitted to the undergraduate supervisor by July 31.

Not available to students in a Combined Honours program.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in English with a CGPA of 10.0 in English courses, and permission of the undergraduate supervisor.

ENGL 4909 [0.5 credit]**Writing and Knowledge-Making in the Disciplines**

The role of writing in constructing knowledge in academic disciplines, as viewed from contemporary socio-cultural perspectives. Consideration of how the goals, values, and assumptions of different disciplines shape their writing in distinctive ways and what implications this holds for pedagogy.

Includes: Experiential Learning Activity

Also listed as ALDS 4403.

Precludes additional credit for LALS 5406 (no longer offered) or ALDS 5602 (no longer offered) or LALS 5602 (no longer offered).

Prerequisite(s): third-year standing or permission of the instructor.

Lectures three hours a week.

ENGL 4910 [0.5 credit]**Independent Creative Writing Project**

Independent creative writing, under the supervision of Departmental faculty, requiring the production of a poetry manuscript (10-15 poems), a one-act play, a 10,000-word novella, or two short stories. A written proposal outlining the project must be submitted to the faculty supervisor by July 31.

Includes: Experiential Learning Activity

Prerequisite(s): completion of required credits for the Creative Writing Concentration, fourth-year Honours standing in English with a CGPA OF 10.0 in English courses, and permission of the Undergraduate Supervisor in conjunction with the faculty supervisor.

ENGL 4915 [0.5 credit]**Advanced Writing Workshop**

An advanced workshop involving regular assignments in creative writing and practical criticism based on this work.

Topics will vary.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in English, a 3000-level creative writing workshop, or permission of the instructor. Permission to register in this course requires the student to submit a writing sample. Instructions on this process and on yearly special topics can be found at carleton.ca/english.

Workshop three hours a week.

ENGL 4947 [0.5 credit]**Issues in Diaspora Literature**

A study of a selected topic in diaspora literature and culture.

Precludes additional credit for ENGL 4907 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4950 [0.5 credit]**Topics in Postcolonial and Diaspora Lit. and Theory**

A study of a selected topic in postcolonial and/or diaspora literatures and theories. Themes, authors, and geographical and temporal focus will vary.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4960 [0.5 credit]**Indigenous Literatures I**

A study of the literatures produced by Indigenous storytellers and writers, with a focus on the oral tradition and life writing.

Precludes additional credit for ENGL 4808 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4961 [0.5 credit]**Indigenous Literatures II**

A study of the contemporary period of Indigenous literature, examining the historical and mythic influences on the literature.

Precludes additional credit for ENGL 4808 and ENGL 4809 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4975 [0.5 credit]**Issues in Postcolonial Theory**

A study of a selected issue in postcolonial and/or diaspora theory.

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

ENGL 4976 [0.5 credit]**Issues in Postcolonial Literature**

A study of a selected topic in postcolonial literature and culture.

Precludes additional credit for ENGL 4906 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

English as a Second Language (ESLA)

English as a Second Language (ESLA) Courses**ESLA 1300 [1.0 credit]****Introductory English as a Second Language for Academic Purposes**

For students with little or no experience with academic English. Introduction to integrated language strategies, critical thinking, and basic research techniques for success at university. Attendance and participation are compulsory.

Includes: Experiential Learning Activity

Prerequisite(s): placement by an approved English language proficiency test, as determined by the School.

Not open to native speakers of English.

Six hours a week (one term), plus a two-hour weekly lab.

ESLA 1500 [1.0 credit]**Intermediate English as a Second Language for Academic Purposes**

For students with moderate experience with academic English. Development and application of academic language conventions, critical thinking and research strategies for success at university. Attendance and participation are compulsory.

Prerequisite(s): grade of C or higher in ESLA 1300 or placement by an approved English language proficiency test, as determined by the School. Not open to native speakers of English.

Six hours a week (one term).

ESLA 1900 [1.0 credit]**Advanced English as a Second Language for Academic Purposes**

For students needing further refinement of academic English. Analysis and synthesis of academic texts and consolidation of academic language and research practices. Attendance and participation are compulsory.

Prerequisite(s): grade of C+ or higher in ESLA 1500 or placement by an approved English language proficiency test, as determined by the School. Not open to native speakers of English.

Six hours a week (one term).

ESLA 2000 [0.5 credit]**English Language Development for Specific Purposes I**

For students in designated programs. Designed primarily for students whose first language is not English. Topics to be determined.

Prerequisite(s): permission of the School.

Three hours a week.

ESLA 3000 [0.5 credit]**English Language Development for Specific Purposes II**

For students in designated programs. Designed primarily for students whose first language is not English. Topics to be determined.

Prerequisite(s): permission of the School.

Three hours a week.

Environmental and Climate Humanities (EACH)

Environmental and Climate Humanities (EACH) Courses

EACH 2000 [0.5 credit]

Introduction to the Environmental and Climate Humanities

An overview of approaches to environmental and climate change issues in the Humanities. Drawing on a range of disciplinary perspectives, students will engage with material depicting climate change and environmental topics, as well as develop research and communication strategies.

Prerequisite(s): second-year standing.

Seminar three hours a week.

EACH 4000 [0.5 credit]

Seminar in the Environmental and Climate Humanities

A capstone seminar designed to refine analytic and research skills related to environmental and climate humanities and to provide students with the opportunity to engage in a research or community engagement project, either individually or in groups. Topics vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): EACH 2000 and third-year standing.

Seminar three hours a week.

Environmental Engineering (ENVE)

Environmental Engineering (ENVE) Courses

ENVE 1001 [0.5 credit]

Architecture and the Environment

Impacts of the environment on architecture; deterioration, freeze/thaw, solar heat, air pollution, moisture; Impacts of architecture on the environment; ecologic footprint, energy consumption, air quality, waste generation; designing with the environment; renewable energy, effective siting and landscape, passive solar energy, natural lighting, energy efficiency.

Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 2001 [0.5 credit]

Process Analysis for Environmental Engineering

Material and energy balances for reacting and non-reacting systems. Applications in mining, metallurgy, pulp and paper, power generation, energy utilization. Emissions to the environment per unit product or service generated. Introduction to life cycle analysis, comparative products and processes.

Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent, and MAAE 2400 (may be taken concurrently), and second-year status in Engineering.

Lectures two hours a week, problem analysis three hours a week.

ENVE 2002 [0.5 credit]

Microbiology

The biology of the Bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.

Also listed as BIOL 2303.

Prerequisite(s): BIOL 1103 or CHEM 1002 or CHEM 1101 or equivalent.

Lectures three hours a week.

ENVE 3001 [0.5 credit]

Water Treatment Principles and Design

Theoretical aspects of unit operations for water treatment with design applications. Topics include water characteristics and contaminants, coagulation, flocculation, sedimentation, filtration, adsorption, ion exchange, membrane processes, disinfection and disinfection by-products, and management of water treatment residuals. Laboratory procedures: settling operations, filtration, aeration, and adsorption.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 3002.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3002 [0.5 credit]

Environmental Engineering Systems Modeling

Engineered systems for pollution abatement; chemical reaction engineering; reaction kinetics and rate data analysis; design and modeling of reactors; single and multiple reactions; ideal and nonideal reactors; single and multi-parameter models; biochemical reaction engineering; process control. Laboratory procedures: reactor systems performance: Batch, CSTR and PFR.

Includes: Experiential Learning Activity

Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent and MATH 2004, and second-year status in Engineering.

Additional recommended background: ENVE 2001.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3003 [0.5 credit]

Water Resources Engineering

A quantitative analysis of natural water systems and the development of these systems as a resource.

Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources.

Reservoir design and operation. Hydraulic properties and availability of groundwater. Storm water management.

Also listed as GEOG 4103.

Prerequisite(s): third-year status in Engineering.

Lectures three hours a week, problem analysis one hour a week.

ENVE 3004 [0.5 credit]**Contaminant and Pollutant Transport in the Environment**

Physical phenomenon governing the transport of contaminants in the environment: diffusion, advection, dispersion, sorption, interphase transfer. Derivation and application of transport equations in air, surface and groundwater pollution; analytical and numerical solutions. Equilibrium partitioning of contaminants among air, water, sediment, and biota.

Prerequisite(s): CHEM 1002 or CHEM 1101 or equivalent; ENVE 3002.

Lectures three hours a week, problem analysis one hour a week.

ENVE 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ENVE 4002 [0.5 credit]**Environmental Geotechnical Engineering**

Landfill design; hydrogeologic principles, water budget, landfill liners, geosynthetics, landfill covers, quality control/quality assurance, clay leachate interaction, composite liner design and leak detection. Landfill operation, maintenance and monitoring. Case studies of landfill design and performance. Geotechnical design of environmental control and containment systems.

Prerequisite(s): ENVE 3004, CIVE 3208.

Also offered at the graduate level, with different requirements, as ENVE 5201/EVG 7201, for which additional credit is precluded.

Lectures three hours a week, problem analysis one hour a week.

ENVE 4003 [0.5 credit]**Air Pollution and Emissions Control**

Air pollutants, classification, sources, and effects. Ambient air quality objectives and monitoring. Pollutant formation mechanisms in combustion. Major pollutant categories and control methods. Indoor air quality. Laboratory procedures: emissions from boilers and IC engines, particulate size distribution and control, IAQ parameters.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or permission of the department.

Also offered at the graduate level, with different requirements, as ENVE 5101/EVG 7101, for which additional credit is precluded.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4005 [0.5 credit]**Wastewater Treatment Principles and Design**

Theoretical aspects of unit operations and processes for wastewater treatment with design applications. Topics include wastewater characteristics, flow rates, primary treatment, chemical unit processes, biological treatment processes, advanced wastewater treatment, disinfection, biosolids treatment and disposal. Laboratory procedures: activated sludge, anaerobic growth, chemical precipitation, disinfection.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 3001, ENVE 3002.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4006 [0.5 credit]**Contaminant Hydrogeology**

Theory of flow through porous media. Site investigation: geology, hydrology and chemistry. Contaminant transport. Unsaturated and multiphase flow. Numerical modeling. Site remediation and remediation technologies.

Prerequisite(s): ENVE 3004 and MAAE 2300. Additional recommended background: ENVE 3003.

Also offered at the graduate level, with different requirements, as ENVE 5301/EVG 7301, for which additional credit is precluded.

Lectures three hours a week, problem analysis one and a half hours a week.

ENVE 4101 [0.5 credit]**Waste Management**

Municipal, hazardous, and mine waste management. Waste composition and potential impacts, collection and transport, recycling and reuse, biological and thermal treatments, isolation. Integrated waste management planning.

Prerequisite(s): ENVE 3001, ENVE 3002 and ENVE 3004.

Also offered at the graduate level, with different requirements, as ENVE 5203/EVG 5203, for which additional credit is precluded.

Lectures three hours a week, problem analysis one hour a week.

ENVE 4104 [0.5 credit]**Environmental Planning and Impact Assessment**

Canada and U.S. environmental regulations. Framework for Environmental Impact Assessment, survey techniques for impact assessment and EIA review process. Case studies of selected engineering projects. Environmental planning, management of residuals and environmental standards. Risk assessment, policy development and decision-making. Fault-tree analysis.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 3004 and fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

ENVE 4105 [0.5 credit]**Green Building Design**

Concepts, calculations, modeling; design of green buildings and their components; sustainable sites and landscaping; passive design; building envelope; building materials; daylighting; heating, cooling, and ventilation; building-integrated renewable energy systems; indoor environmental quality; overview of building standards and codes.

Prerequisite(s): Third-year status in B.Eng. in Architectural Conservation and Sustainability Engineering, Civil Engineering, or Environmental Engineering or fourth-year standing in B.A.S. concentration in Conservation and Sustainability.

Lectures three hours a week, problem analysis one and a half hours per week.

ENVE 4106 [0.5 credit]**Indoor Environmental Quality**

Indoor environmental quality (air quality, thermal, visual, and acoustic comfort); physical and chemical parameters for characterization. Types and sources of indoor air pollution and discomfort; measurement techniques. Heating, ventilation, air conditioning, lighting practices and issues. Modelling of and design for indoor environmental quality.

Prerequisite(s): fourth year status in B.Eng. Architectural Conservation and Sustainability Engineering or B.Eng. Environmental Engineering or fourth year standing in B.A.S. concentration in Conservation and Sustainability. Also offered at the graduate level, with different requirements, as ENVE 5104, for which additional credit is precluded.

Lectures three hours a week, problem analysis and laboratory three hours alternate weeks.

ENVE 4107 [0.5 credit]**Building Services Engineering**

This course provides details on how buildings are designed and operated. The materials provide foundational knowledge to understand building services: mechanical, electrical, plumbing systems with associated controls.

Prerequisite(s): CIVE 3209, ENVE 4105 (may be taken concurrently).

Lecture three hours per week, problem analysis three hours every other week.

ENVE 4200 [0.5 credit]**Climate Change and Engineering**

Survey of the physical science of climate change, impacts on the built environment, and climate adaptation in engineering. Greenhouse gases, global warming, paleoclimatology, and Earth system responses. Climate change impacts on structural, water, transportation, and energy systems. Climate vulnerability assessment, examples of design adaptation.

Prerequisite(s): Fourth-year status in Engineering. Also offered at the graduate level, with different requirements, as ENVE 5200, for which additional credit is precluded.

Lecture three hours per week, problem analysis three hours every other week.

ENVE 4907 [1.0 credit]**Engineering Research Project**

A research project in engineering analysis, design or development carried out by individual students or small teams, for an opportunity to develop initiative, self-reliance, creative ability and engineering judgment and is normally intended for students with high CGPAs and an interest in graduate studies.

Includes: Experiential Learning Activity
Precludes additional credit for ENVE 4917.

Prerequisite(s): fourth-year status in Engineering and permission of the department.

ENVE 4917 [0.5 credit]**Undergraduate Directed Study**

Student carries out a study, analysis, and solution of an engineering problem which results in a written final report. Carried out under close supervision of a faculty member. Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.

Includes: Experiential Learning Activity
Precludes additional credit for ENVE 4907.

Prerequisite(s): permission of the Department and completion of, or concurrent registration in, ENVE 4918. Self study.

ENVE 4918 [1.0 credit]**Design Project**

Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.

Includes: Experiential Learning Activity
Prerequisite(s): ECOR 3800 and fourth-year Status in Engineering. Certain projects may have additional requirements.

Lectures two hours alternate weeks, problem analysis three hours a week.

Environmental Science (ENSC)

Environmental Science (ENSC) Courses

ENSC 1500 [0.5 credit]

Environmental Science Seminar

The purpose and nature of the program; society's view on the natural and human-modified environment; major environmental issues and their scientific aspects; preparation and presentation of paper and seminars.

Includes: Experiential Learning Activity

Prerequisite(s): enrolment in the Environmental Science program.

Lectures, seminars and workshops four hours a week.

ENSC 2000 [0.5 credit]

Environmental Science Field Methods

A field-based course introducing students to practical methods in environmental science. Topics will include earth sciences, geography, biology, and chemistry related aspects of environmental sciences and will focus on quantitative techniques to assess environmental impacts and management. A supplementary fee will apply.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 1006 and BIOL 1004 or BIOL 1104, CHEM 1001 and CHEM 1002 and permission of the Institute.

Field trips, lectures and workshops, seven hours per week (delivered on a single day and on up to two mandatory weekend trips).

ENSC 2001 [0.5 credit]

Earth Resources and Natural Hazards: Environmental Impacts

Environmental impact of mineral, energy and water resource exploitation and impact of hazardous Earth processes such as volcanic eruptions, earthquakes and others: their prediction and mitigation.

Lectures three hours per week.

ENSC 2002 [0.5 credit]

Methods and Analysis in Environmental Science

Study and application of qualitative and quantitative techniques in environmental science, including study design, data collection and assembly, database manipulation, data analysis, and critically evaluating scientific information.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 2507 or permission from the Institute.

Lectures and seminars three hours a week.

ENSC 3000 [0.5 credit]

Environmental Science and Management: Theory and Practice

Theoretical and practical perspectives related to environmental science and management; Emphasis on real-world problems associated with human activities and development of solutions in natural and built environments; Hands-on experience with environmental monitoring and restoration. A supplementary fee will apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Environmental Science or permission of the Institute.

Field trips, lectures and workshops, 7 hours per week (delivered on a single day).

ENSC 3106 [0.5 credit]

Aquatic Science and Management

Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation.

Includes: Experiential Learning Activity

Also listed as GEOG 3106.

Prerequisite(s): third-year standing and a second year science or engineering course.

Workshop four hours per week.

ENSC 3509 [0.5 credit]

Group Research in Environmental Science

Major project relating to an issue involving environmental science; effective methods of team research and presentation of group work. May include field work during class time or on weekends.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Honours Environmental Science program or permission of the Institute.

Lectures, seminars and workshops three hours a week.

ENSC 3700 [0.5 credit]

Topics in Environmental Science

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): Third year standing in the Environmental Science program or permission of the Institute.

ENSC 3906 [0.5 credit]

Project Planning for Environmental Research

Independent or group study on the fundamentals of scientific investigation, which may include use of literature, learning of research techniques, and development of a research proposal, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): Good standing in third year Environmental Science and permission of the Institute.

ENSC 3999 [0.0 credit]**Co-operative Work Term**

Practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Environmental Science Co-operative Option and permission of the Institute. Four-month work term.

ENSC 4001 [0.5 credit]**Environmental Science Practicum**

Experience working in the environmental science sector, applying academic training to practical environmental issues. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Environmental Science program.
practicum

ENSC 4002 [0.5 credit]**Environmental Decisions**

The regulatory and scientific aspects of environmental management decisions, including risk analysis and mitigation, managing chronic and acute environmental impacts, and conservation of species and landscapes. Students will use real-world case studies to learn traditional and cutting-edge decision-making tools.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in any B.Sc. program or permission of the Institute.

Workshops three hours per week.

ENSC 4003 [0.5 credit]**Food Systems and the Environment**

This course explores issues of food systems and their sustainability. We will discuss aspects of food systems, including production, distribution, consumption, waste management, and their impact on communities and the environment.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in B.Sc. or B.HSc. program or permission of the Institute.

Lecture three hours per week.

ENSC 4005 [0.5 credit]**Environmental Solutions and Sustainability Science**

Focus on conceptualization and application of different knowledges and knowledge systems to complex, interdisciplinary real-world problems through an environmental lens. Development of skills and mindset needed to generate creative solutions that will be embraced by diverse publics and decision makers.

Includes: Experiential Learning Activity

Precludes additional credit for ENSC 4700A if taken in Winter term 2021 or Winter term 2022.

Prerequisite(s): Third year standing in B.Sc. programs in Environmental Science, Interdisciplinary Science and Practice, Earth Science, Biology, and Geography and B.A. programs in Biology and Geography, or permission of the Institute.

Lecture, seminar, or workshops three hours a week.

ENSC 4700 [0.5 credit]**Topics in Environmental Science**

Prerequisite(s): third-year standing in the Environmental Science program or permission of the Institute.

Lectures and discussion three hours a week.

ENSC 4901 [0.5 credit]**Directed Projects**

Independent or group study, for fourth-year students to explore a particular project, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Institute. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

ENSC 4906 [1.0 credit]**Honours Research Project**

An independent investigation into an aspect of environmental science supervised by a member of the faculty. Approval of the topic and the research schedule must be obtained from the project supervisor and the course coordinator before the last date for registration.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Honours Environmental Science program, a major CGPA 8.0 and permission of the Institute.

independent study

Environmental Studies (ENST)

Environmental Studies (ENST) Courses

ENST 1000 [0.5 credit]

Introduction to Environmental Studies

A critical introduction to the scholarly field of environmental studies, with an emphasis on society-environment entanglements. It is designed to engage with environmental issues. Possible themes include population, scarcity, institutions, commons, risks, hazards, markets, political economy, and the social construction of nature. Precludes additional credit for FYSM 1100 and ENST 1001 (no longer offered).
Lecture two hours and workshops/tutorials one hour weekly.

ENST 1020 [0.5 credit]

People, Places and Environments

Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place.
Includes: Experiential Learning Activity
Also listed as GEOG 1020.
Lectures two hours a week and tutorial one hour a week.

ENST 2000 [0.5 credit]

Environmental Justice

Contemporary and foundational theories, practice and praxis of environmental justice in Canadian and comparative settings. Combine and communicate about aspects of the physical, built and social environments to understand how uneven conditions develop. Strategies and ideas to move towards greater equity and good environmental relationships.
Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department.
Lecture two hours a week, discussion one hour a week.

ENST 2001 [0.5 credit]

Sustainable Futures: Environmental Challenges and Solutions

Individual and collective responses to pressing environmental problems. Innovative ways in which the environment can be protected and restored, taking into consideration socioeconomic, political and cultural factors. Topics include environmental lifestyles, sustainable communities, food systems, environmental design, and political activism.
Includes: Experiential Learning Activity
Prerequisite(s): second-year standing in the Environmental Studies program or permission of the Department.
Lectures, seminars and field work three hours a week.

ENST 2005 [0.5 credit]

Introduction to Qualitative Research

Introduction to the research process, from generating questions through to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities.

Includes: Experiential Learning Activity

Also listed as GEOG 2005.

Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.

Lectures two hours a week, workshop two hours a week.

ENST 2006 [0.5 credit]

Introduction to Quantitative Research

Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis.

Includes: Experiential Learning Activity

Also listed as GEOG 2006.

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606.

Lectures two hours a week, laboratory two hours a week.

ENST 2500 [0.5 credit]

Climate Change: Social Science Perspectives

An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change.

Includes: Experiential Learning Activity

Also listed as GEOG 2500.

Prerequisite(s): second-year standing or permission of the department.

Lectures two hours a week, discussion groups one hour a week.

ENST 3000 [0.5 credit]

Nature, Environment and Society

Overview of social science perspectives analyzing the relationship of society and the environment. Examination of environmental problems, solutions, conditions, and interventions through the study of concepts, theories, and research drawn from a range of scholarly approaches to questions of nature.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Environmental Studies or permission of the department.

Lecture and discussion three hours a week.

ENST 3022 [0.5 credit]**Environmental and Natural Resources**

Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources.

Includes: Experiential Learning Activity

Also listed as GEOG 3022.

Prerequisite(s): third-year standing in Geography or Environmental Studies or BGIInS Specialization/Stream in Globalization and Environment or permission of the Department.

Lecture three hours a week.

ENST 3900 [0.5 credit]**Honours Field Course**

Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year.

Includes: Experiential Learning Activity

Also listed as GEOG 3000.

Precludes additional credit for ENST 2900 (no longer offered).

Prerequisite(s): GEOG 2005/ ENST 2005 and GEOG 2006/ ENST 2006, third-year Honours standing in Environmental Studies, Geomatics, or Geography, or permission of the Department.

Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply. Consult the department regarding course details.

ENST 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ENST 4000 [0.5 credit]**Environmental Studies Seminar**

An advanced seminar designed to provide a capstone experience that builds upon and applies the analytical skills and interdisciplinary knowledge acquired in the Environmental Studies program. Topics vary year to year and by course section (see departmental website).

Includes: Experiential Learning Activity

Prerequisite(s): Registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program.

Seminar three hours per week.

ENST 4001 [0.5 credit]**Environmental Studies Practicum I**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Prerequisite(s): registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4002 [0.5 credit]**Environmental Studies Practicum II**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the fourth year of the Environmental Studies Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4004 [0.5 credit]**Environmental Impact Assessment**

Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.

Includes: Experiential Learning Activity

Also listed as GEOG 4004.

Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.

Lectures and seminars three hours per week.

ENST 4005 [0.5 credit]**Directed Studies in Environmental Studies**

Students pursue their interest in a selected theme in environmental studies on a tutorial basis with a faculty member.

Prerequisite(s): permission of the Department.

ENST 4006 [0.5 credit]**Environmental Policy Analysis**

Critical examination of the creation, implementation and effectiveness of government policies related to environmental issues. Emphasis on perspectives, actors, institutions and social and economic relationships affecting policy responses to these issues, and on tools for analyzing the implications of specific policy choices.

Prerequisite(s): fourth-year Honours standing in Environmental Studies, Geography, or permission of the Department.

Seminar three hours per week.

ENST 4007 [0.5 credit]**Special Topics in Geography and Environmental Studies**

Selected topics in geography and/or environmental studies.

Also listed as GEOG 4007.

Precludes additional credit for GEOG 4006 (no longer offered).

Prerequisite(s): fourth-year Honours standing in the Department or permission of the Department.

Seminar three hours per week.

ENST 4022 [0.5 credit]**Seminar in People, Resources, and Environmental Change**

A selected topic or field of inquiry concerning natural resource use and environmental change.

Also listed as GEOG 4022.

Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or BGrNS Specialization in Globalization and Environment, or permission of the Department.

Seminar three hours per week.

ENST 4050 [0.5 credit]**Environmental and Geographic Education**

Selected theoretical and applied issues concerning environmental and geographic education.

Also listed as GEOG 4050.

Prerequisite(s): Third-year honours standing in Geography or Environmental Studies, or permission of the Department.

Seminar three hours per week.

ENST 4400 [0.5 credit]**Field Studies**

Field observation and methodology in a selected region, special topic or contemporary problem; on an individual or group basis.

Includes: Experiential Learning Activity

Also listed as GEOG 4000.

Prerequisite(s): third-year Honours standing and permission of the Department.

Hours to be arranged.

ENST 4450 [0.5 credit]**Community-Engaged Research**

Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year.

Includes: Experiential Learning Activity

Also listed as GEOG 4450.

Prerequisite(s): fourth-year standing, or permission of the department.

Lectures, discussion and project work three hours a week.

ENST 4906 [1.0 credit]**Honours Research Project**

An independent investigation into a select aspect of environmental studies, supervised by a faculty member. Possible outcomes might include: workshops, audio-visual productions, lay publications, and field projects accompanied by an essay demonstrating the student's capacity to critically reflect on the research project.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4909, GEOM 4909, GEOG 4906, GEOM 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.

Hours to be arranged with faculty adviser.

ENST 4907 [1.0 credit]**Honours Research Essay**

Interdisciplinary research essay on an environmental issue, carried out in consultation with a faculty supervisor. The student must consult with the undergraduate student advisor in selecting a project and a supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for ENST 4906, GEOG 4909, GEOM 4909, GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906 and GEOM 4906.

Prerequisite(s): fourth-year Honours standing in Environmental Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.

Hours to be arranged with faculty adviser.

European, Russian and Eurasian Studies (EURR)

European and Russian Studies (EURR) Courses**EURR 1001 [0.5 credit]****Introduction to European and Russian Studies**

An introduction to the study of Europe and Russia, including aspects of the histories, societies, cultures, and politics of the region.

Includes: Experiential Learning Activity

Lectures/groups three hours a week.

EURR 2001 [0.5 credit]**Current Issues in European Politics and Society**

An interdisciplinary examination of social, political, and economic issues facing Europe, including the countries of the European Union, Eastern Europe, and Russia.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

EURR 2002 [0.5 credit]**Europe and Russia in the World**

The position of Europe, the European Union, and the Russian Federation in a global context, including geopolitical, economic, security, and human dimensions.

Prerequisite(s): second year standing.

Lecture and discussion three hours a week.

EURR 3001 [0.5 credit]**Literature and Culture in Europe**

A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society.

Also listed as ENGL 3804.

Precludes additional credit for EURR 2000 or ENGL 2010.

Prerequisite(s): second year standing.

Lecture and discussion three hours a week.

EURR 3002 [0.5 credit]**Literature and Culture in Russia and Eurasia**

A survey of the literature and cultural texts that have defined Russian and neighboring Slavic countries.

Examination of fiction and non-fiction texts that have contributed to and reflected the development of Russian and Slavic culture and society.

Also listed as ENGL 3805.

Precludes additional credit for EURR 2000 and ENGL 2010.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

EURR 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A. European and Russian Studies (Honours) Co-operative option, completion of the Co-op preparation classes offered by the Co-op Office and permission of the Institute.

EURR 4002 [0.5 credit]**Post-Soviet States and Societies**

The relationship between social forces and state structures at both the national and local levels in the USSR and the post-Soviet states.

Also listed as PSCI 4502.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5002, PSCI 5110, for which additional credit is precluded.

Seminar three hours a week.

EURR 4003 [0.5 credit]**Social and Political Perspectives in Europe**

Social issues and policies in the European Union including European identity, democratic legitimacy, nationalist and extremist political movements, Euroscepticism, migration and immigration, social inclusion/exclusion and social models, gender and family policy, regional differentiation.

Precludes additional credit for EURR 4000.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5003, for which additional credit is precluded.

Seminar three hours a week.

EURR 4008 [0.5 credit]**Nationalism in Russia and Eurasia**

Ethnic basis of nationalism in the region. Ethnic politics and trends.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5008, for which additional credit is precluded.

Seminar three hours a week.

EURR 4100 [0.5 credit]**Nation-Building in Central and Eastern Europe**

Processes of nation building in the region examined in terms of a particular country, or set of countries.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5100, for which additional credit is precluded.

Seminar three hours a week.

EURR 4101 [0.5 credit]**The Balkans in Transition – 1918 to 1989**

The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes.

Also listed as HIST 4605.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4102 [0.5 credit]**The Balkans since 1989**

Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region.

Also listed as PSCI 4507.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4103 [0.5 credit]**The Great Russian Novel**

A study of masterpieces of prose fiction from the Golden Age of Russian literature. Readings will be chosen from writers such as Turgenev, Tolstoy, Dostoevsky, Gogol, and/or others. All texts will be studied in English translation.

Also listed as ENGL 4600.

Prerequisite(s): Third-year standing.

Lecture three hours a week.

EURR 4104 [0.5 credit]**European Integration and European Security**

Issues related to the formation of supra-national decision-making structures in Europe.

Includes: Experiential Learning Activity

Also listed as PSCI 4608.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5104, for which additional credit is precluded.

Seminar three hours a week.

EURR 4106 [0.5 credit]**Selected Topics in European Integration Studies**

Selected topics related to European integration in the post-World War II period.

Also listed as PSCI 4609.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4107 [0.5 credit]**Russia's Regional and Global Ambitions**

Domestic conditions in Russia from 2000 to the present and the framing of Russia's foreign policy and strategic objectives towards the former Soviet republics and other key global actors, including the United States, the European Union, NATO and China.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5107, for which additional credit is precluded.

Seminar three hours a week.

EURR 4201 [0.5 credit]**Special Topics in European Studies**

A seminar focusing on selected topics related to Europe.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4202 [0.5 credit]**Special Topics in Russian and Eurasian Studies**

A seminar focusing on selected topics related to Russia and neighbouring countries.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5202, for which additional credit is precluded.

Seminar three hours a week.

EURR 4204 [0.5 credit]**Central Europe, Past and Present**

Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood, with emphasis on national accommodations and conflicts.

Also listed as HIST 4604.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5204, for which additional credit is precluded.

Seminar three hours a week.

EURR 4205 [0.5 credit]**Politics of Identity in Europe and the Russian Area**

The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.

Includes: Experiential Learning Activity

Also listed as PSCI 4501.

Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.

Seminar three hours a week.

EURR 4206 [0.5 credit]**Internship and Applied Policy Skills**

A seminar accompanying an unpaid internship placement to develop workplace and applied policy skills. Relating applied experience to academic literature. Writing skills for an applied policy setting. Internship placement: 12 days over 12 weeks.

Includes: Experiential Learning Activity

Prerequisite(s): open only to fourth-year EURUS B.A.

Honours students with a minimum B+ average and placement in an internship position in the same semester or in the previous semester (based on a competitive application process).

Also offered at the graduate level, with different requirements, as EURR 5301, for which additional credit is precluded.

Seminar: six three-hour seminar sessions.

EURR 4207 [0.5 credit]**Politics of Central Eurasia**

Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.

Includes: Experiential Learning Activity

Also listed as PSCI 4503.

Prerequisite(s): fourth year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4208 [0.5 credit]**Foreign Policies of Soviet Successor States**

The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.

Also listed as PSCI 4601.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4209 [0.5 credit]**Politics of the Caucasus and Caspian Basin**

Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.

Includes: Experiential Learning Activity

Also listed as PSCI 4504.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Seminar three hours a week.

EURR 4302 [0.5 credit]**EU Summer Study Abroad**

This course is open only to students in approved summer study options in Europe, particularly the EU Study Tour.

Includes: Experiential Learning Activity

Prerequisite(s): approval of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5302, for which additional credit is precluded.

EURR 4303 [0.5 credit]**Contemporary Europe: From Postwar to the European Union**

History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions.

Includes: Experiential Learning Activity

Also listed as HIST 4606.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5303, for which additional credit is precluded.

Seminar three hours a week.

EURR 4304 [0.5 credit]**Europe and International Migration**

Europe's role in international migration. Topics to be discussed may include migration and mobility as both assets and challenges for sending, transit, and destination countries, changing geographies of migration, inclusion and exclusion, political mobilization, and responses of European states and other actors.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5304, for which additional credit is precluded.

Seminar three hours a week.

EURR 4305 [0.5 credit]**Imperial Russia and the Russian Revolution**

Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life.

Includes: Experiential Learning Activity

Also listed as HIST 4607.

Precludes additional credit for EURR 4203.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5305, for which additional credit is precluded.

Seminar three hours a week.

EURR 4306 [0.5 credit]**The Soviet Union: Power and Culture**

Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR's citizens.

Includes: Experiential Learning Activity

Also listed as HIST 4608.

Precludes additional credit for EURR 4203.

Prerequisite(s): fourth-year Honours standing or permission of the Institute.

Also offered at the graduate level, with different requirements, as EURR 5306, for which additional credit is precluded.

Seminar three hours a week.

EURR 4704 [0.5 credit]**The Business Environment in Europe**

The economic, political, legal, and cultural environment for doing business in the European Union and other regions in Europe. Patterns of foreign trade and investment, market characteristics, science and technology, regulation and European integration, and business culture.

Also listed as BUSI 4704.

Precludes additional credit for EURR 4006 (no longer offered), BUSI 4604 (no longer offered).

Prerequisite(s): third-year standing.

Seminar three hours a week.

EURR 4900 [1.0 credit]**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite(s): permission of the Institute.

EURR 4901 [0.5 credit]**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite(s): permission of the Institute.

EURR 4902 [0.5 credit]**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite(s): permission of the Institute.

EURR 4908 [1.0 credit]**Honours Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by the supervisor and a second reader. Students should consult with the Supervisor of Undergraduate Studies regarding the topic and supervisor. Institute's Honours Essay guidelines apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, a CGPA of 9.00 or higher in courses qualifying for credit in European and Russian Studies, and permission of the Institute.

Film Studies (FILM)

Film Studies (FILM) Courses**FILM 1101 [0.5 credit]****Introduction to Film Studies**

Introduction to the study of film that emphasizes problems and methods of film analysis through the study of various types of films. Topics relating to the filmmaker, film genre, and film history are covered through a focus on questions of style and technique.

Precludes additional credit for FILM 1120, FILM 1000 (no longer offered), and FYSM 1510.

Lecture and screening three hours a week, discussion one hour a week.

FILM 1120 [0.5 credit]**Seminar in Film Studies**

A seminar in the study of film that emphasizes problems and methods of film analysis through the study of a variety of types of films.

Precludes additional credit for FILM 1101, FILM 1000 (no longer offered) and FYSM 1510.

Prerequisite(s): enrolment in a Film Studies major.

Lecture and screening three hours a week, discussion one hour a week.

FILM 2001 [0.5 credit]**Film Theory and Analysis I**

Introduction to major film theories and analytical practices. The objective of this course is to familiarize students with the main theories and methods of analysis that have been developed for the study of film.

Precludes additional credit for FILM 2000 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120 and second-year standing; or permission of the Discipline.

Lecture and screening three hours a week, seminar one hour a week.

FILM 2002 [0.5 credit]**Film Theory and Analysis II**

Building on the skills acquired in FILM 2001, this course considers specific debates in film theory, and provides students with advanced methods for film analysis.

Precludes additional credit for FILM 2000 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120, and FILM 2001, and second-year standing; or permission of the Discipline.

Lecture and screening three hours a week, seminar one hour a week.

FILM 2101 [0.5 credit]**The Film Industry**

The organization of the production, distribution and exhibition practices of various film industries. May include an examination of the relationship between a national film industry and its television industry.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2106 [0.5 credit]**The Documentary**

An examination of the work of individual filmmakers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered.

Also listed as JOUR 2106.

Precludes additional credit for FILM 2105 (no longer offered), JOUR 2105 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2201 [0.5 credit]**National Cinema**

This course examines the film production of specific countries in order to determine the themes, the styles, and the character of a national cinema.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2202 [0.5 credit]**Japanese Cinema**

Various practices and movements in the history of Japanese cinema, ranging from the silent era to the current digital age.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2203 [0.5 credit]**Scandinavian Cinema**

The development of cinema culture and film production in the Scandinavian countries, from the golden age of Scandinavian silent cinema to contemporary Nordic noir.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2204 [0.5 credit]**Indigenous Cinema and Media**

A critical examination of films and other audiovisual media created by Indigenous artists, such as independent films, genre films, documentaries, web series, installations, and video games.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Department.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2206 [0.5 credit]**Canadian Cinema**

A critical examination of Canadian cinema and media and how it relates to other aspects of Canadian culture.

Precludes additional credit for FILM 2207 (no longer offered), FILM 2208 (no longer offered), FILM 2209 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120 or second-year standing; or permission of the Discipline.

Lecture and screening three hours a week, seminar one hour a week.

FILM 2401 [0.5 credit]**Authorship in Film and Media**

A detailed study of the themes, the characteristic style, development and influence of one or more directors.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2601 [0.5 credit]**Film Genres**

This course examines questions of generic form, drawing examples from world cinema.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2606 [0.5 credit]**History of World Cinema I**

Historical survey of world cinema primarily from 1895 to 1945, examining the forms, structures and stylistic conventions of various periods and nations.

Also listed as ENGL 2600.

Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120, and second-year standing, or permission of the discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2607 [0.5 credit]**History of World Cinema II**

Historical survey of world cinema primarily since 1945, examining the forms, structures and stylistic conventions of various periods and nations.

Also listed as ENGL 2601.

Precludes additional credit for FILM 2608 and ENGL 2608 (no longer offered).

Prerequisite(s): FILM 2606 or ENGL 2600 or permission of the discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2801 [0.5 credit]**Film and Media Practice I**

Introduction to the basic principles of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques. This course is intended for Film Studies majors only.

Includes: Experiential Learning Activity

Prerequisite(s): FILM 1101 or FILM 1120.

Lecture/workshops four hours a week.

FILM 2809 [0.5 credit]**The Video Game**

Introduction to the video game as a popular media form, an emerging aesthetic, and a social and cultural practice.

Topics include: history of video games; game form; game industry; narrative; art and design; interactivity; theories of play.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3105 [0.5 credit]**Questions of Documentary Practice**

Theoretical implications of documentary film and documentary television practice.

Also listed as JOUR 3105.

Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3206 [0.5 credit]**Topics in American Cinema**

Studies in various aspects of American cinema with emphasis on historical and critical issues.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3209 [0.5 credit]**Topics in Canadian Cinema**

Studies in various aspects of Canadian cinema. Topics may vary from year to year.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3301 [0.5 credit]**Topics in Cinema, Gender, and Sexuality**

A study of selected topics in gender and cinema with emphasis on critical and historical questions.

Prerequisite(s): 1.0 credit in FILM at the 2000-level and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3402 [0.5 credit]**Film Music**

The use of music in film, from the silent era to the present day. Techniques, styles and theory of film music through the examination of selected scenes.

Also listed as MUSI 3402.

Lectures three hours a week, screening two hours a week.

FILM 3506 [0.5 credit]**Topics in Film Theory**

Building on the skills acquired in FILM 2000, this course provides a critical study of advanced film theories. Topics may include aesthetics, ideological criticism, film and philosophy, and theories of technology and historiography. Precludes additional credit for FILM 3505 (no longer offered).

Prerequisite(s): FILM 2001 and FILM 2002 and third-year standing; or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3601 [0.5 credit]**Contemporary Québec Cinema**

Critical reflection on notable filmmakers, formal and thematic trends, dominant social and political issues, and diverse cultural perspectives in Québec cinema during the 21st century, including the film movement known as the Québec New Wave (Renouveau du cinéma québécois).

French language ability not required.

Prerequisite(s): 1.0 credit in FILM and third-year standing or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3608 [0.5 credit]**Topics in Film History**

Studies of aspects of the history of world cinema.

Topics will vary from year to year and may include the examination of film movements, styles and genres, and/or comparative study of national, regional and/or world-wide trends.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3609 [0.5 credit]**African Cinema**

Major figures and movements in African cinema around such categories as the colonial, the anti-colonial, the postcolonial, the diasporic, the continental, race, Afro-futurism, and world cinema, interrogating in the process the very category of "African cinema".

Also listed as AFRI 3609.

Prerequisite(s): 1.0 credit in FILM and third year standing or permission of instructor.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3701 [0.5 credit]**Topics in Animation, Video, and Experimental Film**

A study of selected topics in animation, video or experimental film.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3800 [0.5 credit]**Film/Video Archival or Curatorial Practice**

Consideration of topics in film/video archival or curatorial practice, including questions related to cultural policy, exhibition, conservation, and interrelationship of media.

Students are expected to bear all travel and other costs arising from required visits to local facilities.

Includes: Experiential Learning Activity

Precludes additional credit for FILM 4800 (no longer offered).

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3801 [0.5 credit]**Film and Media Practice II**

Practical and conceptual approaches to film studies from the point of view of film and media practice. Emphasis may change from year to year, focusing alternately on narrative, experimental, animation or documentary techniques.

Includes: Experiential Learning Activity

Prerequisite(s): FILM 2001 and FILM 2801.

Lecture/workshops four hours a week.

FILM 3808 [0.5 credit]**Cinema and Technology**

The technological development of cinema. Topics may include advances in sound and colour processes, digital effects, exhibition technologies and new media.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3809 [0.5 credit]**Analyzing Digital Media**

History, aesthetics, and theories of digital media and culture. Key concepts in digital media studies, including: digital cinema, interactive documentaries, viral videos, web series, emerging immersive platforms.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3810 [0.5 credit]**Sound in Film and Media**

Questions related to sound in film and media such as: how is sound used to create narratives and emotions? How does sound affect our experience of actual and fictional worlds?.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3901 [0.5 credit]**Topics in Film Studies**

Selected topics and issues not ordinarily treated in the third-year course program.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 2000 level, and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3902 [0.5 credit]**Screenwriting Workshop**

An intermediate workshop involving regular assignments in writing for film.

Includes: Experiential Learning Activity

Also listed as ENGL 3902.

Prerequisite(s): a 2000-level creative writing workshop or permission of the instructor. Permission to register in this course requires the student to submit a portfolio. Instructions can be found at Carleton.ca/English.

Workshop three hours a week.

FILM 4001 [0.5 credit]**Research and Critical Methodologies**

Study of various methodologies for critical, theoretical and historical research in film studies.

Precludes additional credit for FILM 4000 (no longer offered).

Prerequisite(s): FILM 2002, 1.0 credit in FILM at the 3000-level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture two hours a week.

FILM 4002 [0.5 credit]**Topics in Moving Image Culture**

Selected aspects of the audio-visual cultures of the late nineteenth and twentieth centuries.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Seminar three hours a week.

FILM 4201 [0.5 credit]**Selected Topics in National Cinemas**

A study of a selected topic in national cinema.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4203 [0.5 credit]**Film Festivals and World Cinema**

Theoretical and critical study of the film festival as a phenomenon shaping our understanding of film culture, institutions, history and forms. Issues examined may include festivals as sites of cultural legitimation; as spectacle; their political economy; curation/programming; case studies of film festivals around the world.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4301 [0.5 credit]**Topics in Film and Philosophy**

Selected topics in philosophical approaches to the study of film, and an examination of the relations between film theory and philosophical aesthetics.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Also offered at the graduate level, with different requirements, as FILM 5109, for which additional credit is precluded.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4401 [0.5 credit]**Selected Topics in Film Authorship**

A study of questions of authorship in the cinema, concentrating on one or more filmmakers.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4501 [0.5 credit]**Selected Topics in Film Theory**

A study of a selected topic in film theory.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4805 [0.5 credit]**Practicum in Film and Film Studies**

Practical experience through working on specific projects under the supervision of staff at a museum, gallery, archive, or production company in the Ottawa area. A maximum of 0.5 credit Film Studies practica courses may be offered in fulfilment of Film Studies requirements. Graded SAT/UNS.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Film Studies, a CGPA of 9.00 or higher in Film Studies, and permission of the Discipline.

FILM 4901 [0.5 credit]**Special Topic**

Selected topics in film studies not ordinarily available in the regular course program. The choice of topic or topics will vary at least every two years and will be announced well in advance of the registration period.

Prerequisite(s): FILM 1101 or FILM 1120, 1.0 credit in FILM at the 3000 level, and fourth-year standing, or permission of the Discipline.

Screening three hours a week, seminar two hours a week.

FILM 4904 [0.5 credit]**Independent Study**

For students who wish to study a specific topic. Proposed projects must be approved by the Program Committee. Written request outlining the project must be submitted by the first day of the term. An essay is the usual assignment.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Film Studies and a CGPA of 10.00 or higher in Film Studies. Unscheduled.

First Year Seminar (FYSM)

First Year Seminar (FYSM) Courses**FYSM 1003 [1.0 credit]****Introduction to Economics**

An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation and international economic problems.

Precludes additional credit for ECON 1000, ECON 1001, and ECON 1002.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B. Econ. or B.G.In.S. program. This course is an intensive version of ECON 1000 geared to students seeking a more in-depth and interactive introduction to economics.

Seminars three hours a week, tutorials one hour a week.

FYSM 1004 [1.0 credit]**Reading Literatures and Cultures**

Introduction to active literary reading skills, focusing on at least three literary genres including poetry, prose, and drama, with attention to literary, social, historical, and political contexts. This course is writing attentive. Strongly recommended for English majors. Consult English Department website for annual topics.

Precludes additional credit for ENGL 1000 (no longer offered), ENGL 1100, ENGL 1200, ENGL 1300, ENGL 1400, ENGL 1600, and ENGL 1700.

Prerequisite(s): Normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1101 [1.0 credit]**Location is Everything**

Where we live affects who we are. The role of geographic location and environment on human perception, behaviour, and well-being, viewed at scales ranging from local to global; methods of collecting and interpreting information about location.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1104 [1.0 credit]**Human Rights: Issues and Investigations**

Arguments that have been used to defend differing positions on rights issues, past and present. The validity of contending arguments; social factors influencing widespread acceptance of popular views.

Includes: Experiential Learning Activity

Precludes additional credit for HUMR 1001.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar and discussion groups three hours a week.

FYSM 1105 [1.0 credit]**Reading the Web**

Academic writing and study skills through examination of the literacy and social interaction required for various media. Reading and writing on and for the Web and other forms of computer-mediated communications and cooperative work compared with writing for academic purposes.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1106 [1.0 credit]**Issues in Classics**

An investigation of important issues relating to the Greek and Roman worlds. Themes will be drawn from literature, history, art, religion and social life. All texts are in English. Precludes additional credit for CLCV 1000 (no longer offered).

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1107 [1.0 credit]**Social Justice and the City**

Struggles over social and economic inequality in the city, and their relationship to processes of urbanization and global change. Theories and case studies explaining how urban lives and form are shaped by social movements and urban politics. Broad introduction to critical urban geography.

Includes: Experiential Learning Activity

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1108 [0.5 credit]**Sustainable Environments**

The causes and consequences of environmental change; emphasis on the interactions of nature and human behaviour. Ways in which the environment can be protected and restored. Environmental issues that affect our own communities.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1204 [1.0 credit]**Language and Identity**

The creation and expression of social identities through language: gender, age, ethnic and social background.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Lectures three hours a week.

FYSM 1205 [1.0 credit]**Language and Power**

The role of language in maintaining and contesting power relations in domains such as the media, education, advertising, and politics. How meanings are made and exchanged through language in different situations. Precludes additional credit for ALDS 2705.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Lectures three hours a week.

FYSM 1210 [0.5 credit]**Special Topics in Philosophy**

Selected topics in the study of philosophy. Topics offered may vary from year to year and will be announced in advance of the registration period by the Department of Philosophy.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B. Econ., or B.G.In.S. program.

Seminars three hours per week.

FYSM 1211 [0.5 credit]**Looking at Philosophy**

An examination of the following: What is logical thinking? Does God exist? Are values relative? Do we have responsibilities? What is a just society? Do we have free will? What is the mind? What is the nature of reality?.

Precludes additional credit for FYSM 1208 (no longer offered), PHIL 1000 and PHIL 1100.

Seminars three hours per week.

FYSM 1212 [0.5 credit]**Contemporary Moral, Social, and Religious Issues**

Philosophical problems associated with such topical issues as feminist, critical race and disability theories; atheism vs. theism; the meaning of life; moral relativism vs. moral objectivism; egoistic vs. non-egoistic ethics; euthanasia, abortion, capital punishment and environmental ethics; legal paternalism; freedom of the will.

Precludes additional credit for FYSM 1209 (no longer offered), PHIL 1500, PHIL 1550.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours per week.

FYSM 1217 [0.5 credit]**Selected Topics in Communication and Media Studies**

Introductory communication and media studies seminar. Topics offered may vary from year to year and will be announced in advance of the registration period by the Communication and Media Studies program.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. (This course is not the equivalent of COMS 1000).

Seminar three hours a week.

FYSM 1300 [1.0 credit]**History of Philosophy**

The major figures and developments in philosophy from the early Greeks to the present. A primarily descriptive and comparative approach, through critical reasoning is included for comprehending philosophic development. Provides a background from which to understand the philosophical aspects of other disciplines.

Precludes additional credit for PHIL 1600.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1306 [1.0 credit]**Diversity in Psychological World Views**

Theories, research and applications of psychology from the perspective of different cultures and sub-cultures. The validity of psychology across society; how it defines and changes people, and how it reflects and engineers particular social values and norms.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.

Seminars three hours a week.

FYSM 1307 [1.0 credit]**Psychology and Criminal Justice**

Theories, research, and practical applications of psychology to the criminal justice system. Topics may include eyewitness testimony, prediction of violence, classification and rehabilitation of offenders, victim studies, and judicial decision making.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.

Seminars three hours a week.

FYSM 1308 [1.0 credit]**Motivating Humans**

The psychology of human motivation. Everyday concepts such as laziness in relation to diverse theories and explanations of motivation such as drive-reduction, sociobiology, personal goals, self-actualization and spiritual awareness.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S program.

Seminars three hours a week.

FYSM 1310 [1.0 credit]**Selected Topics in Psychology**

Psychology is the scientific study of our thoughts, feelings and behavior. Course examines a selected topic in psychology. The specific topic will vary from year to year and will be announced in advance of the registration period.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1400 [1.0 credit]**Cognition: A Scientific Exploration of the Mind**

Theories, research, and applications of Cognitive Psychology. Research projects will familiarize students with the scientific method used to study pattern recognition, attention, memory, language and thinking.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1401 [1.0 credit]**Multiculturalism in Canada**

Issues relating to the development of and interaction among cultural communities, with major emphasis on the realities of “doing multiculturalism in Canada.” Research teams; organized seminars with volunteers from Canadian cultural and community groups.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1402 [1.0 credit]**Issues in Women's and Gender Studies**

Emphasis on the development of writing, research and analytical skills through the intensive examination of selected topics in women's studies (e.g. popular culture, media, representation and identity, communications, women's writing, motherhood, sexuality, health, technology, law, politics). Specific themes will vary from year to year.

Precludes additional credit for WGST 1808.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminars three hours a week.

FYSM 1405 [1.0 credit]**Selected Topics in History**

Examination of a selected historical topic in a small-class setting. The development of writing, research, analytical, and oral communication skills necessary for success in upper-level university courses is emphasized. Topics will vary from year to year. (Field will depend on topic).

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1406 [1.0 credit]**How Ottawa Works: Exploring National Institutions**

The fundamental political, judicial and administrative institutions that made Canada a unique nation. Students will learn how government institutions are dealing with preservation and maintenance of Canadian cultural and social values.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1408 [1.0 credit]**French on the World Stage**

An introduction to the diversity of the French language and of French-language literatures and cultures throughout the francophone world, including Europe, Canada, the Caribbean, Africa and the Middle East. The course is conducted in French. For French majors and students who have completed the placement.

Prerequisite(s): normally restricted to students entering the first year of B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1409 [1.0 credit]**Social Change in Canada**

Interdisciplinary analysis of social change and how people change Canada, through an examination of movements like environmentalism, feminism, peace, and antiracism. Examination of broader efforts to reshape Canadian society, including culture-jamming and change through popular culture.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1410 [1.0 credit]**Canadian Popular Culture**

Introduction to sites and genres of popular culture in Canada and their intersections with race, gender, sexuality, diaspora, whiteness, regionalism, class and economics.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1450 [1.0 credit]**Topics in Indigenous Studies**

Development of academic writing, thinking and study skills and their relationships with Indigenous ways of knowing. The focus is on contemporary Indigenous topics on Turtle Island and internationally.

Includes: Experiential Learning Activity

Prerequisite(s): enrolment in the Indigenous Enriched Support Program.

Seminar three hours a week

FYSM 1501 [1.0 credit]**The Study of Religions**

Inquiries into the nature of religion and its interpretation, or a specific religious theme or a period of religious history. Specific topics will vary from year to year.

Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program.

Seminar three hours a week.

FYSM 1502 [1.0 credit]**Selected Topics in Legal Studies**

Selected topics in legal studies. Course offerings for the current year are listed at: carleton.ca/first-year-seminars. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1503 [1.0 credit]**Contemporary Culture in Everyday Life**

The role of contemporary cultural forms in everyday life. Focus on the culture/power relationship with attention to the ways that popular forms such as television, film, music, and tourism facilitate or work against the cultural and economic interests of different societal groups. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1504 [1.0 credit]**Society and the Designed Environment**

Inquiry into the relation between human societies and the material environment which they inhabit and use. Focus is on the ways in which groups create the environments in which they live and the ways in which those environments influence and reproduce the groups. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1505 [1.0 credit]**Introduction to Applied Sociology**

Survey of the historic and contemporary contributions of Sociology to various applied fields, which may include official statistics, policy studies, consumer research, and workplace management. Focus on the philosophical, professional, and ethical distinctions between scholarly and applied sociology. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1506 [1.0 credit]**Topics in the Study of Societies**

Introductory seminar emphasizing the development of writing, research and analytical skills through the intensive examination of selected topics in the study of historic and contemporary societies. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1508 [1.0 credit]**Stress, Coping and Well-being**

How do you cope with stress? We live in a stressful world, and how we cope has implications for our happiness and well-being. We will examine theory and research on how stress affects our lives, how people cope, and what it means to be well-adjusted. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1509 [1.0 credit]**Special Studies in Art History, Film Studies and/or Music**

Topics and focus to be determined on a yearly basis. Precludes additional credit for FILM 1511. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1510 [1.0 credit]**Moving Image and Sound**

Introduction to the discipline of film studies through an examination of mise-en-scène, editing, cinematography, and sound in a selection of important films. Emphasis on the critical vocabulary needed for analysis of motion pictures and other audiovisual media. Precludes additional credit for FILM 1000, FILM 1101, FILM 1120. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Lecture and screening three hours a week.

FYSM 1511 [0.5 credit]**Special Studies in Art History, Film Studies and/or Music**

Topics and focus to be determined on a yearly basis. Includes: Experiential Learning Activity. Precludes additional credit for FYSM 1509. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1602 [1.0 credit]**Selected Topics in Political Science**

Selected topics in politics and governance. Topics offered may vary from year to year and will be announced in advance of the registration period by the Department of Political Science. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1603 [1.0 credit]**Full-Year Seminar in European and Russian Studies**

Topics offered may vary from year to year and will be announced in advance of the registration period by the Institute of European, Russian, and Eurasian Studies. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1607 [1.0 credit]**Cognitive Science: Thinking and Knowing**

Interdisciplinary examination of discoveries in linguistics, psychology, philosophy, and computer science concerning the question "What is cognition"? Issues may include the mind-brain controversy, the role of language in thought, and artificial versus natural intelligence. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Classes and seminars three hours a week.

FYSM 1608 [1.0 credit]**Selected Topics in Economics**

Content of this course may vary from year to year and will be announced in advance of the registration period by the Department of Economics. Prerequisite(s): normally restricted to students entering the first year of a B.Econ., B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1609 [1.0 credit]**Integrated Studies in Public Affairs and Management**

An integrated multidisciplinary exploration of a topic of interest to disciplines within the Faculty of Public Affairs offering Bachelor of Arts programs. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Lecture one and a half hours a week, seminar two hours a week.

FYSM 1610 [1.0 credit]**Understanding Environmental Discourse**

An examination of how language and other symbol systems are used to portray and make arguments about ecology and the global environment, with a particular focus on climate change. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

FYSM 1611 [0.5 credit]**One-Term Seminar in Political Science**

One-term seminar on selected topics in politics and governance. Topics offered may vary from year to year and will be announced in advance of the registration period by the Department of Political Science. Precludes additional credit for FYSM 1602. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1614 [0.5 credit]**One-Term Seminar in European and Russian Studies**

Topics offered may vary from year to year and will be announced in advance of the registration period by the Institute of European, Russian, and Eurasian Studies. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1700 [0.5 credit]**Connecting Academics to Careers in Public Affairs**

An introduction to public affairs work and working life, and the development of skills and opportunities for students to plan their university courses and programs of study to connect to a career in public affairs. Seminar three hours a week.

FYSM 1900 [1.0 credit]**Selected Topics In the Study of Academic Discourses**

Introductory seminar emphasizing the development of academic writing, research and analytical skills through the intensive examination of a selected topic in the instructor's field of expertise. Specific topics vary from section to section each year. Includes: Experiential Learning Activity. Precludes additional credit for FYSM 1605. Prerequisite(s): enrolment in the Enriched Support Program. Seminar three hours a week.

FYSM 1901 [1.0 credit]**Selected Topics in African Studies**

Selected topics in the study of Africa. Topics offered may vary from year to year and will be announced in advance of the registration period by the Institute of African Studies. Prerequisite(s): normally restricted to students entering the first year of a B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminar three hours a week.

FYSM 1908 [0.5 credit]**One-Term Seminar in Economics**

Content of this course may vary from year to year and will be announced in advance of the registration period by the Department of Economics. Prerequisite(s): normally restricted to students entering the first year of a B.Econ., B.A., B.Cog.Sc., B.Co.M.S., B.Econ. or B.G.In.S. program. Seminars three hours a week.

Food Science (FOOD)

Food Science (FOOD) Courses

FOOD 1001 [0.5 credit]

Introduction to Food Science

Overview of the food industry. Production, processing, product development, packaging, chemistry, analysis, microbiology. Elements risk assessment, policy making and regulation.

Lectures three hours a week.

FOOD 2001 [0.5 credit]

Principles of Nutrition

Roles of nutrients, lipids, proteins, carbohydrates, fluids and electrolytes. Digestion, absorption, transport, energy metabolism. Disorders including diabetes, cardiovascular disease and osteoporosis. Nutrition through the life cycle.

Prerequisite(s): CHEM 1002, BIOL 1103.

Lectures three hours a week.

FOOD 2002 [0.5 credit]

Food Processing

Principles of major techniques used in food processing and preservation. Processing of specific food groups including cereals, oilseeds, dairy, beverages and frozen foods. Effects of processing on physico-chemical, rheological, and sensory characteristics. Role of research and development in food industry.

Prerequisite(s): FOOD 1001.

Lectures three hours a week.

FOOD 2003 [0.5 credit]

Regulation of the Canadian Food Industry

Regulation of the Canadian food industry including regulators, regulatory powers, the process of enacting laws/regulation and food safety requirements. Food composition, standardization, advertising, labeling, packaging, ingredients, additives, and fortification requirements. Inspection, enforcement and compliance powers and policies.

Prerequisite(s): Second year standing.

Lectures three hours per week.

FOOD 2004 [0.5 credit]

Scientific Communication in Food Science

Principles of effective scientific communication for scientific and non-scientific audiences. Applicable to laboratory reports, literature reviews, posters, presentations, and briefing notes.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001 and second-year standing in Food Science or Chemistry.

Workshop four hours a week.

FOOD 3001 [0.5 credit]

Food Chemistry

Chemistry of the major components of foods such as proteins, lipids, carbohydrates and of the minor components such as enzymes, vitamins and various additives and their relationships to food stability and degradation.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001, FOOD 2001, CHEM 2204, BIOC 2200.

Lectures three hours a week and laboratory three hours a week.

FOOD 3002 [0.5 credit]

Food Analysis

In-depth principles and practices of food proximate analysis. Introductory concepts of food adulteration and detection. Major techniques such as chromatography, colorimetry, spectroscopy, rheology.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001, FOOD 2001, FOOD 3001.

Lectures three hours a week, laboratory three hours a week.

FOOD 3003 [0.5 credit]

Food Packaging and Shelf Life

An introduction to the materials used for food packaging, including their chemical and physical characteristics.

Interactions of these materials with food products, and their effects on shelf life of food.

Prerequisite(s): FOOD 2002.

Lectures three hours a week.

FOOD 3004 [0.5 credit]

Food Engineering

Principles of food engineering. Unit operation in food processing, heat and mass transfer, material balances, fluid mechanics.

Prerequisite(s): FOOD 2002 and MATH 1007.

Lectures three hours a week.

FOOD 3005 [0.5 credit]

Food Microbiology

Foodborne diseases, microbial growth and survival, food spoilage, food fermentation. Techniques for detecting and quantifying microorganisms in foods.

Includes: Experiential Learning Activity

Prerequisite(s): FOOD 1001, FOOD 2001, BIOL 2303.

Lectures three hours a week, laboratory three hours a week.

FOOD 3999 [0.0 credit]

Co-operative Work Term

Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): Registration in the Food Science Co-operative Education option and permission of the Department.

Work term.

FOOD 4001 [0.5 credit]**Food Quality Control**

Factors affecting quality in manufacturing and processing of foods and principles of quality control and quality assurance. Sampling plans and statistical methods.

Applications of physical, chemical, biological and microbiological tests in quality control. Quality systems and standards.

Prerequisite(s): FOOD 2002, FOOD 2003, and third or fourth year standing.

Also offered at the graduate level, with different requirements, as FOOD 5104, for which additional credit is precluded.

Lectures three hours a week.

FOOD 4002 [0.5 credit]**Analysis of Food Contaminants**

Official methods to identify food contaminants and adulterated foods. Includes agricultural chemicals, veterinary drugs, toxins, metals, and allergens.

Interpretation of results in the context of current Canadian and international food safety regulations.

Includes: Experiential Learning Activity

Prerequisite(s): BIOC 3101 or CHEM 3205 or

CHEM 3305, and third or fourth year standing.

Laboratory four hours per week, tutorial one hour a week.

FOOD 4102 [0.5 credit]**Current Issues in Canadian Food Governance, Regulation and Policy**

Focus on the ever-changing and evolving issues in Canadian food governance, regulation and policy. Topical food safety, governance, policies, enforcement, trade and import/export issues and developments.

Prerequisite(s): FOOD 2003, and third or fourth year standing.

Lectures three hours a week.

FOOD 4103 [0.5 credit]**Food Safety Risk Assessment**

The role of risk management in providing science-based approaches to solving food safety problems.

Risk management models and practical applications in critical risk management. An examination of actual risk assessments. Risk communication is addressed.

Prerequisite(s): BIOC 3101, and third or fourth-year standing.

Lectures three hours a week.

FOOD 4201 [0.5 credit]**Advanced Nutrition and Metabolism**

Metabolism of macronutrients in the human body. Detailed catabolic and anabolic reactions of carbohydrates, lipids and proteins. Regulatory control points in healthy and diseased states. Discussion of the literature pertaining to nutrition, metabolism and chronic disease.

Prerequisite(s): FOOD 2001, BIOC 3101 and fourth year standing.

Also offered at the graduate level, with different requirements, as FOOD 5101, for which additional credit is precluded.

Lectures three hours a week.

FOOD 4202 [0.5 credit]**Micronutrients and Health**

Use of scientific literature to examine human metabolism of vitamins and minerals and associated diseases throughout the life cycle. Development of advanced scientific literacy skills, with an emphasis on systematic reviews.

Prerequisite(s): BIOC 2200 or BIOL 2200 and third- or fourth-year standing.

Lectures three hours a week.

FOOD 4203 [0.5 credit]**Functional Foods and Natural Health Products**

Study of the bioactive components of functional foods and natural health products, for the improvement of health and nutrition. Sources and chemistry of bioactives, mechanisms of actions, process technology, efficacy and safety. Role of research and development in industry in commercialization of new products.

Prerequisite(s): BIOC 2200 or BIOL 2200 or BIOL 2201, and third or fourth year standing.

Also offered at the graduate level, with different requirements, as FOOD 5105, for which additional credit is precluded.

Lectures three hours a week.

FOOD 4301 [0.5 credit]**Food Toxicology**

Principles of toxicology as they apply to endogenous plant toxicants, endogenous animal poisons, mycotoxins, pesticide residues, veterinary drugs, food additives, heavy metals, and toxicants produced as a result of processing.

Prerequisite(s): BIOC 3101, FOOD 3001 and fourth-year standing in Food Science.

Lectures three hours a week.

FOOD 4905 [1.0 credit]**Food Science Honours Workshop**

Active learning in areas that include information literacy, critical evaluation of scientific literature, written and oral communication, evaluation and interpretation of results, statistics and data management. Emphasizes transferable skills that are most appropriate for non-research career paths.

Includes: Experiential Learning Activity

Precludes additional credit for FOOD 4907, FOOD 4908.

Prerequisite(s): Fourth-year standing in Food Science and a minimum of 1.5 credits in FOOD at the 3000 level.

Workshop three hours a week.

FOOD 4907 [1.0 credit]**Food Science Honours Essay and Research Proposal**

Students conduct an independent research study using library resources, and prepare a critical review and study proposal on a topic approved by a faculty supervisor. A written report and an oral poster presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for FOOD 4905, FOOD 4908, CHEM 4907 and CHEM 4908.

Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department.

FOOD 4908 [1.0 credit]**Food Science Research Project**

Students in Food Science carry out a research project under the direction of a faculty member. A written report and an oral presentation of the work are required before a grade can be assigned.

Includes: Experiential Learning Activity

Precludes additional credit for FOOD 4905, FOOD 4907, CHEM 4907 and CHEM 4908.

Prerequisite(s): Fourth-year standing in the Food Science program, a minimum of 1.5 credits in FOOD at the 3000 level, minimum Major CGPA of 8.0, and permission of the department.

Laboratory and associated work equivalent to at least eight hours per week for two terms.

French (FREN)

French (FREN) Courses**French Placement for Language Students**

Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering, as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses.

Students desiring a French credit to satisfy the language requirement of their department or school should consult that department or school.

FREN 1001 [1.0 credit]**French 1**

This course is designed for absolute beginners in the language. Classes use audio-visual methods, and emphasis is given to the spoken language. Introduction to reading and writing. Compulsory attendance. Limited enrolment. No auditors. Oral interaction required.

Prerequisite(s): placement test on Carleton Central before registering.

Lecture three hours a week.

FREN 1002 [1.0 credit]**French 2**

Taught in French for students who have had exposure to French but who have difficulty using it in day-to-day communication. Emphasis on oral expression and comprehension; development of reading and writing skills. Oral practice, presentations, interviews, cultural activities, grammar. Compulsory attendance, participation. Oral interaction required.

Prerequisite(s): Grade of C or higher in FREN 1001 or placement test on Carleton Central before registering.

Lecture three hours a week.

FREN 1100 [1.0 credit]**French 3**

Taught in French. Emphasis on speaking, listening, reading and writing skills. Oral presentations, discussions, interviews, reading of novels and magazine articles, listening activities, grammar exercises, compositions. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required.

Precludes additional credit for FREN 1110.

Prerequisite(s): Grade of C or higher in FREN 1002 or placement test on Carleton Central before registering.

Lecture three hours a week.

FREN 1110 [1.0 credit]**French 3: Writing**

Taught in French. For students with low intermediate writing skills in French. Improvement of spelling, grammar, sentence-structure and vocabulary. Study of the processes involved in the production of a variety of texts. Introduction to the use of references. Self-correction. Attendance, participation compulsory. Oral interaction required.

Precludes additional credit for FREN 1100.

Prerequisite(s): Grade of C or higher in FREN 1002 or placement test on Carleton Central before registering.

Lecture three hours a week.

FREN 2100 [1.0 credit]**French 4**

Taught in French. For non-francophone students. Advanced speaking, listening, reading and writing skills. Advanced level reading from various sources, including literary texts. Grammar exercises, essays, oral presentations. Attendance and participation are compulsory. Limited enrolment. No auditors. Oral interaction required.

Precludes additional credit for FREN 2110.

Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering.

Lectures three hours a week.

FREN 2110 [1.0 credit]**French 4: Writing**

Taught in French. For students with intermediate French writing skills. Refinement of spelling, grammar, sentence-structure and vocabulary; accuracy and textual organization. Essay-writing. Use and referencing of various sources. Self-correction. Attendance and participation compulsory. Oral interaction required.

Precludes additional credit for FREN 2100.

Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering. First week: compulsory placement. Limited enrolment. No auditors.

Lectures three hours a week.

FREN 2202 [0.5 credit]**Introduction aux études littéraires 1**

Survol historique des littératures d'expression française : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire.

Precludes additional credit for FREN 2201.

Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.

Cours trois heures par semaine.

FREN 2203 [0.5 credit]**Introduction aux études littéraires 2**

Survol historique des littératures d'expression française au Québec et au Canada : principaux auteurs, grands mouvements, évolution des genres. Initiation aux méthodes et notions d'analyse littéraire.

Precludes additional credit for FREN 2201.

Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.

Cours trois heures par semaine.

FREN 2401 [1.0 credit]**Introduction à la linguistique française**

Étude de la structure et du fonctionnement du système linguistique à travers l'analyse de données du français (de France et du Canada). La construction du sens, des sons au discours; code oral et écrit.

Prerequisite(s): FREN 1100 or FREN 1110 with a grade of C or higher or permission of the Department. This course may be taken concurrently with FREN 2100 or FREN 2110.

Cours trois heures par semaine.

FREN 2701 [0.5 credit]**Travaux pratiques en français oral**

Travaux pratiques pour développer l'aisance et la fluidité dans l'expression orale. This course is not suitable for francophones.

Prerequisite(s): Grade of C or higher in FREN 1100 or FREN 1110 or placement test on Carleton Central before registering.

Cours trois heures par semaine.

FREN 3050 [0.5 credit]**Compétences critiques**

Initiation aux techniques et pratiques de la réflexion universitaire : documentation (bibliothèque, bases de données, bibliographies critiques), lecture (analyse, synthèse et évaluation critique de textes de savoir) et réflexion (cadre théorique, méthode d'analyse, pratique du discours raisonné).

Prerequisite(s): FREN 2202, FREN 2203 and FREN 2401, or permission of the Department.

Cours trois heures par semaine.

FREN 3060 [0.5 credit]**Perfectionnement de la grammaire par la pratique**

Analyse et pratique réfléchie des formes de la grammaire dans le discours: Structures des phrases, marques d'accord, concordance des temps, prépositions et compléments, homonymie et homographie, faux amis et anglicismes. Développement des techniques efficaces d'autocorrection et maîtrise d'outils informatisés.

Prerequisite(s): FREN 2202 and FREN 2203 or FREN 2401, or permission of the Department.

Cours trois heures par semaine.

FREN 3212 [0.5 credit]**Des manuscrits aux belles-lettres : de la littérature médiévale à l'humanisme**

Étude d'une sélection de textes, tirés de divers genres, permettant d'explorer les origines de la littérature française : oralité et écriture; chansons de geste; courtoisie; récits de voyages; littérature de la cour; humanisme. Différentes approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3213 [0.5 credit]**Du Baroque aux Lumières**

Étude des 17^e et 18^e siècles : raison et universalisme, encyclopédisme, construction et représentation de l'altérité, colonialisme et esclavagisme. Analyse d'importants développements littéraires : essai et conte philosophiques, théâtre et critique sociale, évolution du discours romanesque. Approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3214 [0.5 credit]**Révolutions, avant-gardes et ruptures : du 19^e siècle aux années 1950**

Étude de quelques grands mouvements ayant rythmé la vie des lettres francophones : romantisme, réalisme, naturalisme, symbolisme, surréalisme, modernisme. La littérature de la décolonisation et l'émergence de la littérature canadienne-française. Analyse des genres et de leur évolution. Approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3215 [0.5 credit]**Les ères du soupçon : contemporanéités de la littérature**

Études des principales orientations définissant les littératures francophones contemporaines depuis la fin de la Seconde Guerre mondiale : littérature engagée, existentialisme, nouveau roman. Littérature du Québec et du Canada français. Littératures postcoloniales, émergentes, transnationales. Approches théoriques du texte littéraire.

Prerequisite(s): FREN 2202 and FREN 2203 or permission of the Department.

Cours trois heures par semaine.

FREN 3216 [0.5 credit]**Problématique littéraire**

Étude approfondie d'une problématique dans le champ des études littéraires. Lectures critiques, réflexion théorique et études d'œuvres littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.

Cours trois heures par semaine.

FREN 3217 [0.5 credit]**Oeuvre et auteur-e(s)**

Étude approfondie d'un(e) auteur(e) ou groupe d'auteur(e)s et de leur œuvre. Lectures critiques, théoriques et littéraires. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.

Cours trois heures par semaine.

FREN 3218 [0.5 credit]**Genre et mouvement**

Étude approfondie d'un genre ou mouvement littéraire. Conditions d'émergence (contextes: historique, social, artistique, etc). Textes théoriques et manifestes. Principaux représentants. Influence (continuations, ruptures). Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.

Cours trois heures par semaine.

FREN 3251 [0.5 credit]**Introduction aux méthodes d'analyse littéraire**

Présentation et application de diverses approches théoriques du texte littéraire ou étude approfondie d'une approche théorique particulière (analyses structurelles, méthodes d'interprétation, contextualisation sociohistorique, poétique, etc.).

Prerequisite(s): FREN 2202 and FREN 2203, or permission of the Department.

Cours trois heures par semaine.

FREN 3411 [0.5 credit]**Phonétique et phonologie du français**

Étude empirique et théorique des éléments et systèmes phonétiques et phonologiques du français. Processus segmentaux et suprasegmentaux, structures syllabiques et prosodiques. Problèmes classiques de la phonologie française.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3412 [0.5 credit]**Morphologie du français**

Étude de la forme des unités lexicales et grammaticales du français et de leur portée signifiante. Analyse du système flexionnel du français et des mécanismes de formation des mots.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3413 [0.5 credit]**Syntaxe du français**

Études de la structure et des composantes de la phrase: mots et syntagmes. Analyse syntaxique de la phrase simple et complexe. Modèle hiérarchique de l'organisation de la phrase.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3414 [0.5 credit]**Sociolinguistique du français**

Le français, une réalité hétérogène. Approche variationniste, qualitative et quantitative, de l'étude du français dans ses dimensions dialectales, sociales et stylistiques. Variations intra-individuelles et entre individus. Facteurs externes de la variation interne du français.

Diversités du français.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3415 [0.5 credit]**Histoire du français**

Évolution interne de l'histoire du français et de ses influences externes. De sa naissance, présumée et réelle, à ses états actuels. Les langues contributrices. Contacts linguistiques. Dynamiques du changement linguistique. Véhicularisation et vernacularisation. Idéologies de la langue française.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3416 [0.5 credit]**Le français dans le monde**

Présentation des variétés de français parlé dans le monde, principalement à l'extérieur du Canada. Étude des aspects historiques et sociopolitiques de la diffusion du français. Analyse des traits linguistiques propres aux variétés. Colonisation, créolisation, emprunt linguistique, variation régionale, aménagement linguistique.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3417 [0.5 credit]**Le français au Canada**

Présentation des variétés de français parlé au Canada. Étude des aspects historiques et sociopolitiques de l'implantation du français en Nouvelle-France. Variétés laurentienne et acadienne. Analyse des traits linguistiques. Enjeux sociolinguistiques. Contact des langues, bilinguisme, minorités linguistiques.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3451 [0.5 credit]**Thème en linguistique**

Étude d'un thème particulier en linguistique française. Le contenu varie selon l'année. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2401 or permission of the Department.

Cours trois heures par semaine.

FREN 3511 [0.5 credit]**Expression écrite et traduction**

Perfectionnement de l'expression écrite au moyen d'un apprentissage appliqué de la traduction.

Analyses des principales interférences syntaxiques, sémantiques et discursives entre le français et l'anglais. Approfondissement des pratiques de textualisation: cohérence et cohésion, idiomatization, registres, paraphrase, considérations stylistiques, etc. Approche privilégiant le texte pragmatique.

Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.

Cours trois heures par semaine.

FREN 3701 [0.5 credit]**Français oral**

Techniques avancées d'expression orale. This course is not suitable for francophones.

Prerequisite(s): one FREN course at the 2000 level, or permission of the Department.

Cours trois heures par semaine.

FREN 3702 [0.5 credit]**Français écrit**

Techniques avancées d'expression écrite.

Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.

Cours trois heures par semaine.

FREN 3900 [0.5 credit]**Apprentissage et enseignement du français langue seconde**

Initiation aux études des programmes au Canada et ailleurs. Processus d'acquisition des habiletés d'expression et de compréhension. Survol des théories passées et actuelles. Appréciation et critique de pratiques pédagogiques.

Prerequisite(s): one FREN course at the 2000-level, or permission of the Department.

Cours trois heures par semaine.

FREN 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

FREN 4060 [0.5 credit]**Projet de recherche supervisé**

Développement d'un projet individuel supervisé en littérature ou en linguistique, amorcé dans un cours antérieur. Raffinement de l'expression et des idées. Présentation publique des résultats.

Prerequisite(s): fourth-year standing in the BA Honours in French.

Unscheduled

FREN 4212 [0.5 credit]**Littératures francophones**

Analyse de problématiques liées à la francophonie littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5212, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4213 [0.5 credit]**Littérature québécoise et canadienne d'expression française**

Étude approfondie portant sur un ou plusieurs aspects des littératures d'expression française au Canada. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5213, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4214 [0.5 credit]**Genre et mouvement**

Étude approfondie d'un thème, d'un mouvement, d'un genre dans le champ littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5214, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4215 [0.5 credit]**Problématiques contemporaines**

Étude de questions contemporaines dans le domaine littéraire. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5215, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4300 [0.5 credit]**Experiential learning in French and Francophone studies**

Topics in French language, literature or linguistics. Application of language skills in a francophone context. Topic and location may vary; consult Departmental website.

Includes: Experiential Learning Activity

Prerequisite(s): FREN 2202 and FREN 2203, or FREN 2401, depending on the topic, and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5501, for which additional credit is precluded.

FREN 4301 [0.5 credit]**Experiential learning: Séminaire d'été à Québec**

Exploration of Quebec City and its literary, cultural and historical significance. Application of language skills in Quebec City.

Includes: Experiential Learning Activity

Precludes additional credit for FREN 4300 if taken before 2022.

Prerequisite(s): FREN 2202, FREN 2203 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5502, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4412 [0.5 credit]**Diversité du français**

Études des variétés du français, dans ses dimensions spatiales. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4412.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4413 [0.5 credit]**Diachronie du français**

Étude du français, dans ses dimensions historiques.

Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4413.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4414 [0.5 credit]**Analyse du français**

Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4414.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the department.

Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4415 [0.5 credit]**Variation du français**

Étude des variations internes de la langue, dans ses dimensions orales et écrites. Contenu variable selon les années : consulter le site web du département de français. Repeatable for credit when the topic changes.

Also listed as LING 4415.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded.

Cours trois heures par semaine.

FREN 4511 [0.5 credit]**Traduction : méthodologie et pratique**

Initiation à différents principes et approches méthodologiques de la traduction. Analyse de texte appliquée à la traduction, repérage raisonné des difficultés, typologie des fautes de traduction, étude de divers procédés, documentation, terminologie et révision. Approche privilégiant une typologie textuelle variée.

Prerequisite(s): FREN 3511 or permission of the Department.

Cours trois heures par semaine.

FREN 4801 [1.0 credit]**Tutorial A**

Special topics in an aspect of French studies under the supervision of a faculty member.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

FREN 4802 [0.5 credit]**Tutorial B**

Special topics in an aspect of French studies under the supervision of a faculty member.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

FREN 4900 [0.5 credit]**Thème choisi en apprentissage et enseignement du français langue seconde**

Approfondissement de considérations théoriques et pratiques reliées à l'enseignement et l'apprentissage du français comme langue seconde. Analyse de composantes pédagogiques générales et en contexte, applications didactiques. Évaluation, critères et standards. Le contenu précis de ce cours varie selon les années. Consulter le site Web.

Prerequisite(s): fourth-year standing or permission of the Department.

Cours trois heures par semaine.

French Interdisciplinary Studies (FINS)

French Interdisciplinary Studies (FINS) Courses

These courses are intended to meet the needs of a broad range of students who are interested in expanding their knowledge of the French-language presence in other disciplines, or in improving their passive knowledge of written and spoken French (reading and listening) with a view to applying this knowledge in other disciplines.

Some FINS courses are offered with English as the language of instruction.

French Placement for Language Students

Students who have not previously taken a course in the French Department must complete the Placement Test on Carleton Central before registering as per instructions received through their Carleton e-mail account. Students should note that they cannot go backward in a sequence of levels in language courses. Students desiring a

French credit to satisfy the language requirement of their department or school should consult that department or school.

FINS 2105 [0.5 credit]**French Reading I**

Development of reading skills, especially relating to academic texts. Basic French grammar and vocabulary.

Given in English. Open to beginners. No auditors.

Precludes additional credit for FREN 1006.

Prerequisite(s): permission of the Department.

Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 2205 [0.5 credit]**Oral Comprehension I**

Training in basic comprehension of spoken French, through the study of selected and edited video and audio material. Oral documents in French; analyses, discussion, reporting and testing in English. No auditors.

Prerequisite(s): permission of the Department.

FINS 2511 [0.5 credit]**Introduction à la société et à la culture québécoises (version française)**

Ce cours exclusivement en ligne permettra de découvrir et d'analyser des référents dominants de la trame historique du Québec de même que les débats entourant l'identité et le nationalisme et les relations avec le Canada anglais.

Also listed as CDNS 2510/FINS 2510 (in English), CDNS 2511.

Precludes additional credit for CDNS 2510 and FINS 2510.

Prerequisite(s): niveau de deuxième année ou permission de L'École d'études canadiennes.

Exclusivement en ligne. Équivalent d'un cours de trois heures par semaine, accessible toute la semaine.

FINS 3105 [0.5 credit]**French Reading II**

Reading knowledge for academic purposes. Advanced reading strategies. Individual reading in the student's specialization. Given in English. No auditors.

Precludes additional credit for FREN 1006.

Prerequisite(s): FINS 2105 or permission of the Department.

Offered online. Equivalent to a weekly three-hour course, available all week.

FINS 3205 [0.5 credit]**Oral Comprehension II**

Advanced training and practice in the comprehension of authentic oral materials in French. Individual assignments in the student's specialization. Oral documents in French; analysis, discussion, reporting and testing in English and French. No auditors.

Prerequisite(s): FINS 2205 or permission of the Department.

FINS 3405 [0.5 credit]**French for Special or Professional Purposes I**

Topics may vary from year to year. Consult the Web site.

Prerequisite(s): permission of the Department.

FINS 3406 [0.5 credit]**French for Special or Professional Purposes II**

Topics may vary from year to year. Consult the Web site.

Prerequisite(s): permission of the Department.

FINS 3407 [0.5 credit]**French for Special or Professional Purposes III**

Topics may vary from year to year. Consult the Web site.

Prerequisite(s): permission of the Department.

FINS 3801 [0.5 credit]**Selected Topics in French A**

Students may take a third-year course offered in the Department of French while submitting course work in English. This course does not count towards any degree program in French.

Prerequisite(s): third-year standing and permission of the Department.

Hours to be determined.

FINS 4801 [0.5 credit]**Selected Topics in French A**

Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

FINS 4802 [0.5 credit]**Selected Topics in French B**

Students may take a fourth- or fifth-year special topic seminar offered in the Department of French while submitting written work in English. This course does not count towards credit in any degree program in French.

Prerequisite(s): fourth-year standing or permission of the Department.

Hours to be determined.

Geography (GEOG)

Geography (GEOG) Courses

4000-level courses are normally restricted to students with fourth-year Honours standing. However, students with third-year standing may take 4000-level courses provided they have the necessary prerequisites, a Geography CGPA of 6.50 or better, and permission of the Department.

GEOG 1010 [0.5 credit]**Global Environmental Systems**

Principles, processes and interactions in the Earth's environment emphasizing the flow of energy and matter within global systems. Atmospheric and oceanic processes, earth surface processes and biogeochemical cycling. Case studies on the interaction between human activity and the natural environment.

Includes: Experiential Learning Activity

Lectures three hours a week, laboratory two hours a week.

GEOG 1020 [0.5 credit]**People, Places and Environments**

Introduction to human geography. Examination of relationships between people, communities, society and the natural environment at local to global scales. Population change, cultural patterns, and historical, economic, political and environmental forces that shape human activity and experiences from place to place.

Includes: Experiential Learning Activity

Also listed as ENST 1020.

Lectures two hours a week and tutorial one hour a week.

GEOG 1023 [0.5 credit]**Introduction to Cities and Urbanization**

Introduction to the study of cities, urbanization and suburbanization. Geography of urban experience, development and change across an urbanizing planet. Urbanization processes, patterns and issues in different cities and regions; the relationships among urban areas.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 2400 (no longer offered).

Lectures two hours per week and tutorials one hour per week.

GEOG 2005 [0.5 credit]**Introduction to Qualitative Research**

Introduction to the research process, from generating questions to reporting results. Topics include intensive and extensive research approaches; the use of surveys, interviews and other data collection methods; the analysis of qualitative information; and the ethical dimensions of doing research with people and communities.

Includes: Experiential Learning Activity

Also listed as ENST 2005.

Prerequisite(s): 1.0 credit in GEOG or ENST at the 1000-level and second-year standing, or permission of the Department.

Lectures two hours a week, workshop two hours a week.

GEOG 2006 [0.5 credit]**Introduction to Quantitative Research**

Introduction to solving problems using descriptive and inferential statistical methods. Graphical and numerical tools to describe distributions. Probability, sampling and estimates, and hypothesis testing. Fundamentals of spatial statistics and analysis.

Includes: Experiential Learning Activity

Also listed as ENST 2006.

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), NEUR 2002, PSCI 2702, STAT 2507, STAT 2606.

Lectures two hours a week, laboratory two hours a week.

GEOG 2013 [0.5 credit]**Weather and Water**

Introduction to climate, weather and the hydrological cycle. Physical properties of the atmosphere, radiation and energy balances, global circulation, atmospheric moisture and precipitation, weather systems and forecasting, mechanisms of climate change.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 1010 or EARTH 1006 or ISCI 1001.

Lectures three hours a week, laboratory three hours a week.

GEOG 2014 [0.5 credit]**The Earth's Surface**

Introduction to geomorphology. Weathering, slope and fluvial processes within drainage basins, and glacial and periglacial processes.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 1010 or EARTH 1006 or ISCI 1001.

Lectures three hours a week, laboratory three hours a week.

GEOG 2020 [0.5 credit]**Ecosystems of Canada**

Introduction to world biomes and in-depth analysis of the distribution and development of Canada's major ecosystems including the boreal forest, temperate forest, tundra, grasslands, wetlands, and aquatic environments; Current issues in ecosystem science and conservation such as agricultural management, forestry and urban ecology.

Prerequisite(s): GEOG 1010 or EARTH 1006 or EARTH 1010 or ISCI 1001.

Lectures three hours a week.

GEOG 2023 [0.5 credit]**Cities, Inequality and Urban Change**

Geographical perspectives on the uneven power relationships and politics that shape urban lives and urban space. Key topics may include housing and segregation, planning for sustainable cities, urban social movements, urban inequality and changing livelihoods.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 2400 (no longer offered).

Prerequisite(s): GEOG 1023, or second-year standing, or permission of the department.

Lectures two hours per week and tutorials one hour per week.

GEOG 2200 [0.5 credit]**Global Connections**

Globalization and global environmental change as linked processes. Geographical analysis of economic, cultural and political transformations acting at global, national and local scales. Choices and constraints underlying economic, social and environmental sustainability.

Prerequisite(s): second-year standing or permission of the Department.

Lectures three hours a week.

GEOG 2300 [0.5 credit]**Space, Place and Culture**

Introduction to social and cultural geography, including how theories of space, place, landscape, power, and knowledge can be used to understand the geographic dimensions of social and cultural life. Topics include culture and identity, migration and transnationalism, nature, gender, sexuality, race, colonialism, consumption, and work.

Prerequisite(s): second-year standing or permission of the Department.

Lectures two hours a week, discussion one hour a week.

GEOG 2500 [0.5 credit]**Climate Change: Social Science Perspectives**

An introduction to climate change as a political, economic and socio-cultural phenomenon, including the political-economic and world-historical causes of anthropogenic greenhouse gas emissions; variations in impact and vulnerability; climate justice and other political movements; global mitigation and adaptation strategies; and proposals for radical systemic change.

Includes: Experiential Learning Activity

Also listed as ENST 2500.

Prerequisite(s): second-year standing or permission of the Department.

Lectures two hours a week, discussion groups one hour a week.

GEOG 2600 [0.5 credit]**Geography Behind the Headlines**

Exploration of the geographical backgrounds to selected issues of current public interest, through geography's perspective of integrating human and physical environments. Issues selected will be structured from the global through the national/regional to the local, identifying the interdependencies among the scales. Lecture three hours a week.

GEOG 3000 [0.5 credit]**Honours Field Course**

Field research, with a focus on data collection methods, analysis and presentation of findings. Design and conduct research that links the human and biophysical environment. Topics may change from year to year.

Includes: Experiential Learning Activity

Also listed as ENST 3900.

Precludes additional credit for ENST 2900 (no longer offered).

Prerequisite(s): GEOG 2005/ENST 2005 and GEOG 2006/ENST 2006, third-year Honours standing in Geography, Geomatics or Environmental Studies, or permission of the Department.

Normally consists of a multi-day field excursion in the Ottawa region. A supplementary charge may apply.

Consult the department regarding course details.

GEOG 3001 [0.5 credit]**Doing Qualitative Research**

Theory and methods used in qualitative approaches to research in human geography; hands-on experience and discussion of beliefs and claims underlying scholarly work. Ethical and practical dilemmas confronting researchers.

Gathering and interpreting qualitative information; representing knowledge.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2005 or ENST 2005.

Lecture and discussion three hours per week.

GEOG 3003 [0.5 credit]**Quantitative Geography**

Quantitative methods used in geographical research: multiple correlation and regression, principal component/factor analysis, spatial statistics, cluster analysis, and a review of other selected techniques. Computer-based analysis.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 or permission of the Department.

Lecture two hours a week, laboratory two hours a week.

GEOG 3009 [0.5 credit]**Special Topics in Human Geography**

Selected topics concerning human geography not usually included in regular course offerings. Topic varies from year to year. Students should check with the Department for more information.

Precludes additional credit for GEOG 2505 (no longer offered).

Prerequisite(s): GEOG 1020 or ENST 1020 and third-year standing, or permission of the Department.

Lecture three hours per week.

GEOG 3010 [0.5 credit]**Field Methods in Physical Geography**

Field and laboratory approaches, methodologies and techniques in physical geography. Field projects will be undertaken to collect data for analysis, evaluation and presentation.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2006 or ENST 2006 or STAT 2507 and GEOG 2013 or GEOG 2014 or permission of the Department.

Normally consists of a multi-day field camp, including lodging, during Fall or Winter Break, and regular classroom meetings. A supplementary charge will apply.

GEOG 3021 [0.5 credit]**Geographies of Culture and Identity**

Examination of culture, identity and place over time. Colonial and other historical processes that have shaped societies from place to place; relationships between cultural groups and their natural surroundings; gender, ethnicity, nationality and other dimensions of identity; impacts of globalization.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2300 and third-year standing, or permission of the Department.

Lecture three hours a week.

GEOG 3022 [0.5 credit]**Environmental and Natural Resources**

Exploration of complexity, dynamics, uncertainty and equity issues underpinning environmental and resource issues; review and appraisal of selected contemporary methods to assess and manage environmental and natural resources.

Includes: Experiential Learning Activity

Also listed as ENST 3022.

Prerequisite(s): third-year standing in Geography or Environmental Studies or BGIInS Specialization/Stream in Globalization and Environment or permission of the Department.

Lecture three hours a week.

GEOG 3023 [0.5 credit]**Cities in a Global World**

Introduces the study of cities as "systems of cities", the political economy of linkages between urban places located unevenly in space, and "cities as systems". Case studies of socio-cultural, political and economic relations within biophysical and built environments.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2023 and third-year standing, or permission of the department.

Lecture and discussion three hours a week.

GEOG 3024 [0.5 credit]**Understanding Globalization**

Geographical analysis of processes of globalization: theoretical frameworks, historical context and contemporary challenges.

Prerequisite(s): GEOG 2200 and third-year standing, or permission of the Department.

Lecture three hours a week.

GEOG 3025 [0.5 credit]**Geographies of Selected Regions**

Geographical analysis of key questions facing a selected region of the world. Attention will focus on selected topics within one or more regions and their related global context.

Prerequisite(s): third-year standing in a B.A. program or BGIInS Specialization/Stream in Globalization and Environment or permission of the Department.

Lecture three hours a week.

GEOG 3026 [0.5 credit]**Topics in the Geography of Canada**

Selected topic concerning the geography of Canada. Topic varies from year to year.

Precludes additional credit for GEOG 2505 [no longer offered].

Prerequisite(s): GEOG 1020 or ENST 1020 and second-year standing, or permission of the Department.

Lecture three hours a week.

GEOG 3030 [0.5 credit]**Regional Field Excursion**

Guided and independent geographic field research, with a focus on data collection methods, and analysis and presentation of findings. Consists of an excursion outside of the Ottawa region. A supplementary charge may apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year Honours standing in Geography or BGIInS Specialization in Globalization and Environment or permission of the Department.

A seven- to ten-day field excursion.

GEOG 3102 [0.5 credit]**Geomorphology**

Geomorphological agents of landscape change at the Earth's surface, emphasizing the role of water, ice and wind in erosion and deposition; use of geomorphic indicators in studies of environmental change. A supplementary charge may apply.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2014 and third-year standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week, one field excursion.

GEOG 3103 [0.5 credit]**Watershed Hydrology**

Principles of hydrology at local and watershed scales, emphasizing: soil moisture regimes; field data collection and analysis of surface water or snow and ice conditions; hydrologic processes in cold environments; and regional runoff regimes in Canada.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2013 or permission of the Department.

Lectures three hours a week, laboratory two hours a week.

GEOG 3104 [0.5 credit]**Principles of Biogeography**

Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.

Includes: Experiential Learning Activity

Also listed as BIOL 3608.

Prerequisite(s): GEOG 1010 or BIOL 2600, or permission of the Department.

Lectures, laboratory, and fieldwork five hours a week.

GEOG 3105 [0.5 credit]**Climate and Atmospheric Change**

The global climate system, with emphasis on global change variability over the historical and modern periods; the changing composition of the atmosphere and its impact on climate; analysis and interpretation of climatic and atmospheric data; modeling of climate systems.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2013 or permission of the Department.

Lecture two hours a week, laboratory two hours a week.

GEOG 3106 [0.5 credit]**Aquatic Science and Management**

Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation.

Includes: Experiential Learning Activity

Also listed as ENSC 3106.

Prerequisite(s): third-year standing and a second-year science or engineering course.

Workshop four hours per week.

GEOG 3108 [0.5 credit]**Soil Properties**

The physical and chemical properties of soils; soil-water relationships, weathering processes, soil mineralogy, cation exchange, soil pH. A plant-oriented perspective predominates.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 2013 or GEOG 2014 or permission of the Department.

Lectures and laboratory five hours a week.

GEOG 3206 [0.5 credit]**Health, Environment, and Society**

Factors influencing human health in an ecological framework involving population structure, habitat, and behaviour. Changes in the distribution of communicable and degenerative diseases are portrayed as being related to historical and contemporary development and globalization processes. Sources, types and characteristics of geographically referenced health information.

Prerequisite(s): third-year standing.

Lectures three hours a week.

GEOG 3209 [0.5 credit]**Sustainability and Environment in the South**

Analysis of the relationships between people and environment in selected regions in the South (Africa, Asia, Latin America). Emphasis on sustainable livelihoods and local action in relation to broader socio-economic and political processes. Regions selected vary from year to year.

Prerequisite(s): third-year standing and ENST 2000 or ENST 2001 or GEOG 2200 or GEOG 2300 or permission of the Department.

Lecture and discussion three hours a week.

GEOG 3404 [0.5 credit]**Geographies of Economic Development**

Geographical approaches to economic development and difference at local, regional and global scales. Critical historical, cultural, social and political economic perspectives on 'development', including theories of the state, colonial power, and development institutions. Spatial dynamics and environmental impacts of economic activity.

Prerequisite(s): GEOG 2200 or permission of the Department.

Lectures three hours a week.

GEOG 3501 [0.5 credit]**Geographies of the Canadian North**

The physical characteristics, historical geography, economic resources, settlement patterns and problems and the future development of Arctic and Subarctic lands, focusing primarily on Canada.

Prerequisite(s): third-year standing or permission of the Department.

Lectures three hours a week.

GEOG 3700 [0.5 credit]**Population Geography**

The distributional aspects of population attributes; areal patterns of population characteristics and their spatial variations associated with differences in the nature of places; migratory movements within the framework of spatial models of interactions between locations.

Prerequisite(s): GEOG 2200 or GEOG 2300, or permission of the Department.

Lectures three hours a week.

GEOG 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

GEOG 4000 [0.5 credit]**Field Studies**

Field observation and methodology in a selected region; individual or group basis.

Includes: Experiential Learning Activity

Also listed as ENST 4400.

Prerequisite(s): third-year Honours standing and permission of the Department.

Hours to be arranged.

GEOG 4004 [0.5 credit]**Environmental Impact Assessment**

Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues, with emphasis on Canadian case studies.

Includes: Experiential Learning Activity

Also listed as ENST 4004.

Prerequisite(s): GEOG 3022 or ENST 3022, and fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.

Lectures and seminars three hours a week.

GEOG 4005 [0.5 credit]**Directed Studies in Geography**

Students pursue their interest in a selected theme in geography on a tutorial basis with a member of the Department.

Prerequisite(s): permission of the Department.

GEOG 4007 [0.5 credit]**Special Topics in Geography and Environmental Studies**

Selected topics in geography and/or environmental studies.

Also listed as ENST 4007.

Precludes additional credit for GEOG 4006.

Prerequisite(s): fourth-year Honours standing in the Department or permission of the Department.

Seminar three hours per week.

GEOG 4013 [0.5 credit]**Cold Region Hydrology**

An examination of cold region hydrologic processes via experimental and observational studies; analysis of hydrologic data and application of hydrologic models.

Prerequisite(s): GEOG 3103.

Lecture three hours a week.

GEOG 4017 [0.5 credit]**Global Biogeochemical Cycles**

Processes that control the fluxes and reservoirs of biologically active chemical constituents on land, in the atmosphere, and in the oceans. Interactions between biogeochemical cycles and the Earth's climate; impact of land use and fossil fuel emissions on biogeochemical cycles and global change.

Prerequisite(s): GEOG 3108 or permission of the Department.

Lectures three hours a week.

GEOG 4021 [0.5 credit]**Seminar in Culture, Identity and Place**

Selected topic or field of inquiry concerning the geographic dimensions of culture, identity and place.

Prerequisite(s): GEOG 3021 and fourth-year Honours standing in Geography or permission of the Department.

Seminar three hours a week.

GEOG 4022 [0.5 credit]**Seminar in People, Resources and Environmental Change**

A selected topic or field of inquiry concerning natural resource use and environmental change.

Also listed as ENST 4022.

Prerequisite(s): GEOG 3022 or ENST 3022 and fourth-year Honours standing in Geography or Environmental Studies or BGIInS Specialization in Globalization and Environment or permission of the Department.

Seminar three hours a week.

GEOG 4023 [0.5 credit]**Seminar in Special Topics on the City**

A selected topic or field of inquiry concerning urban geography.

Prerequisite(s): GEOG 3023 and fourth-year Honours standing in Geography or Environmental Studies or BGIInS Specialization in Globalization and Environment or permission of the Department.

Seminar three hours per week.

GEOG 4024 [0.5 credit]**Seminar in Globalization**

A selected issue or topic related to globalization.

Prerequisite(s): GEOG 3024 and fourth-year Honours standing in Geography or BGIInS Specialization in Globalization and Environment or permission of the Department.

Seminar three hours week.

GEOG 4040 [0.5 credit]**Geographic Thought**

Major intellectual issues and debates in the development of contemporary human geography, including history of geographic thought, geographic responses to social and political movements and debates, and geographic engagement with contemporary critical theory.

Prerequisite(s): fourth-year Honours standing in Geography or permission of the Department.

Seminar three hours per week.

GEOG 4050 [0.5 credit]**Environmental and Geographic Education**

Selected theoretical and applied issues concerning environmental and geographic education.

Also listed as ENST 4050.

Prerequisite(s): third-year Honours standing in Geography or Environmental Studies, or permission of the Department.

Seminar three hours per week.

GEOG 4101 [0.5 credit]**Two Million Years of Environmental Change**

Multidisciplinary scientific study of the changes in the physical environment of the Earth during the last two million years and methods of studying recent Earth history, with focus on current research.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in a B.Sc. program, or a third year Science Geography Elective or a third year EARTH course, or permission of the Department. Note:

GEOG 3105 is recommended.

Lectures three hours a week.

GEOG 4103 [0.5 credit]**Water Resources Engineering**

A quantitative analysis of natural water systems and the development of these systems as a resource.

Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Availability of groundwater. Storm water management.

Also listed as ENVE 3003.

Prerequisite(s): permission of the Department.

Recommended background: MAAE 2300.

Lectures three hours a week, problem analysis one hour a week.

GEOG 4104 [0.5 credit]**Microclimatology**

The formation of microclimates near the Earth's surface; energy and water flows; the interaction of atmospheric processes with the physical properties of surfaces.

Prerequisite(s): GEOG 2013 or permission of the Department.

Lectures three hours a week.

GEOG 4108 [0.5 credit]**Permafrost**

Distribution, development, and degradation of permafrost in Canada; thermal and hydrologic regime of permafrost terrain; development of landforms in permafrost regions; geotechnical consideration in northern construction.

Prerequisite(s): GEOG 3108 or permission of the Department.

Lectures three hours a week.

GEOG 4304 [0.5 credit]**Transportation Engineering and Planning**

Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion; human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods.

Also listed as CIVE 3304.

Prerequisite(s): third-year standing, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

GEOG 4323 [0.5 credit]**Urban and Regional Planning**

History, theories, and practice of urban planning, as well as the policies, plans, and programs developed and implemented in diverse communities. Course topics may include the integration of community development and social planning, urban design, transportation and infrastructure, and environmental management.

Includes: Experiential Learning Activity

Prerequisite(s): GEOG 3023 and fourth-year standing in Geography or Environmental Studies, or permission of the department.

Lectures three hours per week.

GEOG 4406 [0.5 credit]**Practicum I**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOM 4406.

Prerequisite(s): fourth-year Honours standing in Geography or Geomatics and permission of the Department.

Field placement one day a week.

GEOG 4408 [0.5 credit]**Practicum II**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOM 4408.

Prerequisite(s): fourth-year Honours standing in Geography or Geomatics and permission of the Department.

Field placement of one day a week.

GEOG 4450 [0.5 credit]**Community-Engaged Research**

Working in partnership with local organizations, students apply their geographical knowledge to conduct community-engaged research. Student projects will generate outputs for community partners. Research topics vary year to year.

Includes: Experiential Learning Activity

Also listed as ENST 4450.

Prerequisite(s): fourth-year standing, or permission of the department.

Lectures, discussion and project work three hours a week.

GEOG 4906 [1.0 credit]**Honours Research Project**

A research project based on a modeling, laboratory or field problem. The project is supervised by a member of the department and a written thesis and poster must be submitted.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOM 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in B.Sc. Geography, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOG 4909 [1.0 credit]**Honours Research Thesis**

Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906, GEOM 4906, GEOM 4909, ENST 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in B.A. Geography or B.Globalization and International Studies, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

Geomatics (GEOM)

Geomatics (GEOM) Courses**GEOG 1004 [0.5 credit]****Maps, Satellites and the Geospatial Revolution**

Introduction to the creation and use of maps using a variety of geospatial tools to better understand and resolve physical, social and environmental problems. Overview of geomatics (cartography and map design, geographic information systems, GPS, remote sensing).

Includes: Experiential Learning Activity

Also listed as EARTH 2004.

Precludes additional credit for GEOM 2004 (no longer offered).

Lectures and laboratory, four hours a week.

GEOM 2005 [0.5 credit]**Introduction to Geospatial Programming**

Computer programming for geomatics students focusing on storage, manipulation, management, visualization and analysis of geospatial data; Essential coding concepts and best practices including variables, loops, and conditional statements; programmatic handling of raster and vector data structures; batch geoprocessing and map production; GIS tool customization.

Includes: Experiential Learning Activity

Lectures and laboratory, four hours per week.

GEOM 2007 [0.5 credit]**Vector GIS: Points, Lines and Polygons**

Storage, visualization, manipulation and analysis of vector geospatial data. Vector geoprocessing including buffering, overlays and topological analysis; feature classification and cartographic representation; managing coordinate reference systems for vector layers; selected applications of vector GIS such as urban planning, environmental and resource management and socio-economic mapping.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 1004 or permission of the Department.

Lectures and laboratory, four hours a week.

GEOM 2008 [0.5 credit]**Raster GIS: Pixels and Grids**

Storage, visualization, manipulation, and analysis of gridded geospatial data; 3D visualization; digital terrain analysis; interpolation and filtering; raster geoprocessing and projections; selected topics and applications in raster GIS such as least-cost path analysis, natural hazard assessment, pollution mapping and hotspot analysis for population geography.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 1004 or permission of the Department.

Lectures and laboratory, four hours per week.

GEOM 3002 [0.5 credit]**Introduction to Remote Sensing**

Principles and methods of remote sensing; visual interpretation of air photos and satellite imagery; digital image processing, analysis and classification for thematic mapping; introduction to various active and passive remote sensing imagery types such as optical, hyperspectral, RADAR and LiDAR.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2008 and third-year standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOM 3005 [0.5 credit]**Geospatial Analysis**

An advanced course in geospatial analysis theory and practice; geoprocessing; geo-visualization; geostatistics; spatial modelling; working with spatio-temporal data structures; advanced site-suitability and network analysis; intermediate GIS tool customization.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2007 and GEOM 2008.

Lecture and laboratories five hours a week.

GEOM 3007 [0.5 credit]**Cartographic Theory and Design**

Principles of and issues in cartography, cartographic communication and map design; practical aspects of cartographic representation using multimedia and online/interactive mapping.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2007 or GEOM 2008 or permission of the Department.

Lectures and laboratory four hours a week.

GEOM 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

GEOM 4001 [0.5 credit]**Special Topics in Geomatics**

A seminar focusing on selected topics in geomatics including advanced theory and/or application.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Geomatics or permission of the department.

Laboratory or seminar three hours a week.

GEOM 4003 [0.5 credit]**Remote Sensing of the Environment**

Advanced image enhancement; land cover classification for thematic mapping; biophysical modeling; applications in resources, environment, and urban mapping.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 3002 and Honours standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOM 4005 [0.5 credit]**Directed Studies in Geomatics**

Students pursue their interest in a selected theme in Geomatics on a tutorial basis with a member of the Department.

Prerequisite(s): permission of the Department.

GEOM 4008 [0.5 credit]**Advanced Topics in Geographic Information Systems**

Advanced methods and techniques in GIS applications including: positional and attribute error analysis, multiple criteria decision making, interpolation, elevation modeling and ortho-imaging, and spatial pattern measurement.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 3005 and Honours standing.

Lectures two hours a week, laboratory two hours a week.

GEOM 4009 [0.5 credit]**Custom Geomatics Applications**

Development and implementation of custom geomatics applications and workflows using programming and various geoprocessing tools. Project design, application development, GIS automation and documentation.

Includes: Experiential Learning Activity

Prerequisite(s): GEOM 2005 and (GEOM 3002 or GEOM 3005 or GEOM 3007), or permission of the department.

Workshop three hours a week.

GEOM 4406 [0.5 credit]**Practicum I**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOG 4406.

Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.

Field placement one day a week.

GEOM 4408 [0.5 credit]**Practicum II**

Students apply their knowledge and research skills and gain experience through field placements in government, the private sector, non-government organisations and with community organisations in the environmental field.

Includes: Experiential Learning Activity

Also listed as GEOG 4408.

Prerequisite(s): fourth-year Honours standing in Geomatics or Geography and permission of the Department.

Field placement one day a week.

GEOM 4906 [1.0 credit]**Honours Research Project**

Candidates for B.Sc. with Concentration in Geomatics undertake a research project within their area of specialization. The project is supervised by a member of the department and a written report must be submitted. The candidate may be examined orally on the report.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904/GEOM 4904 (no longer offered), GEOG 4906, GEOG 4909, GEOM 4909, ENST 4906, and ENST 4907.

Prerequisite(s): fourth-year Honours standing in BSc Geomatics, and an approved research topic and adviser. Hours to be arranged with faculty adviser.

GEOM 4909 [1.0 credit]**Honours Research Thesis**

Independent design and implementation of a research project leading to the submission of a research thesis. Students work with an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for GEOG 4904 / GEOM 4904 (no longer offered), GEOG 4906, GEOM 4906, GEOG 4909, ENST 4906 and ENST 4907.

Prerequisite(s): fourth-year Honours standing in B.A. Geomatics, a minimum CGPA of 9.00 in the major or permission of the Department, and an approved research topic and adviser.

Hours to be arranged with faculty adviser.

German (GERM)

German (GERM) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

GERM 1010 [0.5 credit]**First-Year German I**

For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for GERM 1110.

Four hours a week.

GERM 1020 [0.5 credit]**First-Year German II**

Continuation of first-year German. Oral skills, reading and writing. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for GERM 1110.

Prerequisite(s): grade of C or higher in GERM 1010, or permission of the School.

Four hours a week.

GERM 1110 [1.0 credit]**Intensive First-Year German**

For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for GERM 1010 and GERM 1020.

Eight hours a week (one term).

GERM 2000 [0.5 credit]**Reading in German I**

For students with no prior knowledge of German who would like to develop the skills to read a variety of German texts, including passages from scholarly journals, reports, online newspaper or magazine articles.

Includes: Experiential Learning Activity

Three hours a week.

GERM 2010 [0.5 credit]**Second-Year German I**

Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for GERM 2110.

Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.

Four hours a week.

GERM 2020 [0.5 credit]**Second-Year German II**

Continuation of second-year German. Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for GERM 2110.

Prerequisite(s): grade of C or higher in GERM 2010, or permission of the School.

Four hours a week.

GERM 2110 [1.0 credit]**Intensive Second-Year German**

Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for GERM 2010 and GERM 2020.

Prerequisite(s): grade of C or higher in GERM 1020, GERM 1110, or permission of the School.

Eight hours a week (one term).

GERM 3000 [0.5 credit]**Reading in German II**

A continuation of Reading in German I. Further development of reading skills in German.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 2000 or permission of the School.

Three hours a week.

GERM 3110 [1.0 credit]**Intensive Third-Year German**

Continuation of the study of German to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies.

Compulsory attendance.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 2020, GERM 2110, or permission of the School.

Six hours a week (one term).

GERM 4110 [1.0 credit]**Intensive Fourth-Year German**

Advanced spoken and written German with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 3110, or permission of the School.

Six hours a week (one term).

GERM 4215 [0.5 credit]**German for Specific Purposes**

Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.

Three hours per week.

GERM 4380 [0.5 credit]**Topics in German-speaking Cultures**

Selected topics in German-speaking cultures and societies. Development of advanced language skills.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in GERM 4110, or permission of the School.

Three hours per week.

GERM 4900 [1.0 credit]**Independent Study**

Research in a topic in German language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.

GERM 4901 [0.5 credit]**Independent Study**

Research in a topic in German language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in German, grade of C or higher in GERM 4110 or equivalent, or permission of the School.

Global Politics (GPOL)

Global Politics (GPOL) Courses

GPOL 1500 [0.5 credit]

Debates in Global Politics

Theories, concepts and issues in international relations, global politics and global political economy. Topics may include conflict and intervention, peace and security, international institutions, human rights, gender, culture, globalization, multinational corporations, foreign policy, environmental issues, international development, and relations between rich and poor countries.

Precludes additional credit for PSCI 1200, PSCI 2601 and GPOL 1000.

Prerequisite(s): first-year standing in the Global Politics Specialization or Stream of the B.G.In.S. degree.

Lectures two hours a week, tutorials one hour a week.

GPOL 2500 [0.5 credit]

Debates in Comparative Politics

Themes and debates in comparative politics, especially as they relate to the study and practice of Global Politics.

Precludes additional credit for GPOL 1000 (no longer offered).

Prerequisite(s): second-year standing in the Global Politics Specialization or Stream in the BGIInS degree.

Lecture three hours a week.

GPOL 3000 [0.5 credit]

Themes in Global and Comparative Politics

Themes and issues with a global and comparative focus, examining the role of key actors and applying theories and knowledge gained in previous Global Politics courses.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Global Politics program or third-year standing in the Global Politics Specialization or Stream in the BGIInS degree.

Seminar three hours a week.

GPOL 3100 [2.5 credits]

Internship in Global Politics

The internship provides students with an opportunity to work with and study an organization whose institutional focus is on some international or regional aspect. Students will write a research paper on a topic related either to the organization or to the focus of the organization.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Global Politics program or third-year standing in the Global Politics Specialization of the BGIInS degree with a CGPA in the major of 9.00 or higher, or permission of the Department.

Unscheduled.

GPOL 4908 [1.0 credit]

Honours Research Essay

Individual research project resulting in a major essay, completed under the supervision of a faculty member. The Honours Research Essay is evaluated by the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Global Politics with a CGPA of 9.00 or fourth-year standing in the Global Politics Specialization in the BGIInS degree with a CGPA in the major of 9.00 or higher, or permission of the Department.

Unscheduled.

Global and International Studies (GINS)

Global and International Studies (GINS) Courses

GINS 1000 [0.5 credit]

Global History

Introduction to political, social, cultural, economic and military developments in global and international history.

Prerequisite(s): Enrolment in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 1010 [0.5 credit]

International Law and Politics

Introduction to the evolution of the international system, including the rise of the state, sovereignty, and the challenge of international cooperation. The role of international law in addressing global issues such as human rights, security and trade.

Prerequisite(s): Enrolment in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 1020 [0.5 credit]

Ethnography, Globalization and Culture

Introduction to the intersection of globalization processes with social and cultural diversity as examined through ethnography and ethnographic methods. Topics may include cultural survival, growing economic inequality, ecological vulnerabilities, health practices, human rights, and shifting racialized, gendered, religious, ethnic, and national identities.

Prerequisite(s): Enrolment in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINS 1100 [0.5 credit]

Global Development

Introduction to key questions and issues in development studies, taught from an inter-disciplinary perspective.

Lectures two hours a week, tutorials one hour a week.

GINs 1300 [0.0 credit]**International Experience Requirement Preparation**

This mandatory course introduces BGIInS students to the International Experience Requirement (IER) and to the various policies and procedures associated with it. Graded SAT/UNS.

Prerequisite(s): first-year standing in BGIInS.

Online course.

GINs 2000 [0.5 credit]**Ethics and Globalization**

Introduction to global ethical issues, focusing on alternative lines of ethical argument. Topics may include poverty and unequal development, climate change, war and terrorism, reparations for colonialism and slavery, international relief services, ill effects of globalization, trafficking and forced labour, democracy and global governance.

Prerequisite(s): Second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINs 2010 [0.5 credit]**Globalization and International Economic Issues**

An introduction to the world economy, international trade and finance, and economic development. Social and economic implications for both rich and poor countries of lowered barriers to the international flows of goods, services, capital, labour, and information in the age of globalization.

Prerequisite(s): Second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINs 2020 [0.5 credit]**Global Literatures**

A study of the global dynamics of the contemporary literary imagination and literary production; literature as cultural practice; the politics of literary circulation; the politics of language and translation.

Prerequisite(s): second-year standing in B.G.In.S.

Lectures two hours a week, tutorials one hour a week.

GINs 3010 [0.5 credit]**Global and International Theory**

Advanced analysis of global and international theories from a variety of perspectives, including realism, liberalism, postmodernism, constructivism, post-structuralism, literary and critical approaches.

Prerequisite(s): third-year standing in B.G.In.S.

Lectures three hours a week.

GINs 3020 [0.5 credit]**Places, Boundaries, Movements and Global Environmental Change**

Examination of the relationship between individual places and global social and environmental processes. The changing nature of regions, states and political boundaries in the context of political and economic globalization and international migration. Social science perspectives on climate change vulnerability, adaptation and mitigation.

Prerequisite(s): third-year standing in B.G.In.S.

Lectures three hours a week.

GINs 3100 [0.5 credit]**Global and International Group Project**

Student teams work on a project related to global and international studies. Lectures are devoted to discussing group project-related issues and student presentations.

A project proposal, a series of project reports and oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lecture one hour per week, tutorials two hours per week.

GINs 3200 [0.5 credit]**Experiential Learning Abroad**

An experiential learning opportunity combining volunteer work abroad with classroom instruction on the Carleton campus. Through experiential engagement outside Canada, together with critical reflection, students will learn about the challenges and rewards of global engagement.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing.

Lecture two hours a week plus a three week experiential learning trip abroad.

GINs 3300 [0.5 credit]**Global and International Studies Abroad: Selected Topics**

Based at a partner university around the world, and taught by a Carleton faculty member, the course will include lectures, seminars, guest speakers, field visits and group research projects to examine a topic in global and international studies. Topic and location will change annually.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and approval by the BGIInS Program Director.

Three week intensive course.

GINs 3900 [0.5 credit]**International Placement**

Placement for six weeks with a global and international focus.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B.G.In.S.

GINs 3901 [1.0 credit]**International Placement**

Placement for twelve weeks with a global and international focus.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B.G.In.S.

GINS 3930 [0.5 credit]**Carleton International Placement**

Placement for six weeks with a global and international focus for students outside of the BGIInS Program.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3701, IPAF 3900 (no longer offered).

Prerequisite(s): Third-year standing and minimum CGPA of 9.0.

Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3931 [1.0 credit]**Carleton International Placement**

Placement for twelve weeks with a global and international focus for students outside of the BGIInS Program.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 3702, IPAF 3901 (no longer offered).

Prerequisite(s): Third-year standing and minimum CGPA of 9.0.

Placement hours to be negotiated with on-site placement supervisor. Required assignments and due dates will be set by the course instructor at Carleton University.

GINS 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

GINS 4090 [0.5 credit]**Honours Seminar in Global and International Studies**

Examination of key debates in global and international studies from a variety of disciplinary and interdisciplinary perspectives. Integration of knowledge from different areas of emphasis in global studies. A major research paper is required that undertakes to focus theoretical insight on practical concerns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in B.G.In.S. Seminar three hours a week.

GINS 4900 [0.5 credit]**Tutorial in Global and International Studies**

A tutorial on selected topics in which seminars are not available.

Prerequisite(s): fourth-year Honours standing in B.G.In.S. and permission of the Program Director.

GINS 4908 [1.0 credit]**Honours Research Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. B.G.In.S. regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in B.G.In.S. with a CGPA of 9.00 or higher, or permission of the Program Director.

Greek (GREK)

Greek (GREK) Courses**GREK 1005 [0.5 credit]****Introduction to Greek I**

A course for beginners in ancient Greek, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Greek.

Includes: Experiential Learning Activity

Lectures and tutorials four hours a week.

GREK 1006 [0.5 credit]**Introduction to Greek II**

A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.

Includes: Experiential Learning Activity

Prerequisite(s): GREK 1005 or equivalent.

Lectures and tutorials four hours a week.

GREK 2200 [0.5 credit]**Intermediate Greek I**

Further study of the language; introduction to the reading of ancient Greek authors.

Includes: Experiential Learning Activity

Precludes additional credit for GREK 2001.

Prerequisite(s): GREK 1006 or equivalent.

Tutorials three hours a week.

GREK 2201 [0.5 credit]**Intermediate Greek II**

Continued study of the language; reading of selected prose and poetry by ancient Greek authors; development of translation skills.

Precludes additional credit for GREK 2001.

Prerequisite(s): GREK 2200 or equivalent.

Tutorials three hours a week.

GREK 3900 [0.5 credit]**Advanced Greek I**

Reading and critical discussion of selections from ancient Greek.

Prerequisite(s): GREK 2200, GREK 2201 or equivalent.

Tutorials three hours a week.

GREK 3901 [0.5 credit]**Advanced Greek II**

Reading and critical discussion of selections from ancient Greek.

Prerequisite(s): GREK 2200, GREK 2201 or equivalent.

Tutorials three hours a week.

GREK 4900 [0.5 credit]**Directed Study****GREK 4901 [0.5 credit]****Directed Study**

Health Sciences (HLTH)

Health Sciences (HLTH) Courses

HLTH 1000 [0.5 credit]

Fundamentals of Health

Introduction to what comprises a healthy body and mind, and what leads to illness and disease. Biomedical, psychosocial, and epidemiological approaches to current issues in the field of health. Policy and cultural/environmental contexts.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 1001.

Lectures three hours a week and group one hour a week.

HLTH 1001 [0.5 credit]

Principles of Health I

Health and illness will be considered from an interdisciplinary perspective, including biomedical, cultural, psychosocial and environmental.

Precludes additional credit for HLTH 1000.

Lecture three hours a week.

HLTH 1002 [0.5 credit]

Health Science Communication

Introduction to using library, database and/or bioinformatics resources to develop informed verbal, non-verbal and written communication within the context of healthcare, public health and health research. Concepts in ethical scholarship, proper use of sources and plagiarism will be introduced.

Lecture three hours a week.

HLTH 2001 [0.5 credit]

Health Research Methods and Skills

An introduction to quantitative and qualitative methods and designs in health sciences research. Basic research skills will also be provided, including regulatory aspects of conducting research, information literacy skills, evaluating published research and other sources of evidence in the digital age.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 1000 or HLTH 1001.

Lecture three hours a week, lab/workshop two hours a week.

HLTH 2002 [0.5 credit]

Molecular and Cellular Pathology

Introduction to the causes, natural history, and pathophysiology of common human diseases of various organ systems. Diseases related to structural and functional changes at the molecular, cellular and organ level.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 1000 and BIOL 1103 or HLTH 2020.

Lecture three hours a week.

HLTH 2003 [0.5 credit]

Social Determinants of Health

Overview of the social determinants of health, ranging from early life experiences, poverty, social status, migration, and the physical environment. The relation between social determinants and environmental vulnerabilities, health behaviours, illness prevalence, treatment outcomes, and access to health care.

Prerequisite(s): HLTH 1000 or HLTH 1001.

Lecture three hours a week.

HLTH 2004 [0.5 credit]

Microbiology and Virology

Introduction to the pathogenic microorganisms, including fungal, bacterial, viral and prion. Biochemical, genetic, pathological and epidemiological aspects in the human context; their interaction with host defense systems and strategies for antibiotic and vaccine development.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 3301 (no longer offered).

Prerequisite(s): HLTH 1000 and BIOL 1103 or permission of the department.

Lecture three hours a week, and laboratory three hours a week.

HLTH 2020 [0.5 credit]

Principles of Health II

An overview of the history of medicine, its relationship to society, medical and health terminology, introduction to organ systems, diseases, illnesses and their diagnoses, current events in health and medicine.

Prerequisite(s): HLTH 1001 or permission of the department.

Lecture three hours a week.

HLTH 3101 [0.5 credit]

Global Health

Overview of issues in global health with focus on low- and middle-income countries. Key indicators and determinants of global health, implementation and evaluation of global programs, challenges of research and interventions in under served areas, and key players in addressing global health issues.

Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.

Lecture and seminar, three hours per week.

HLTH 3102 [0.5 credit]

Indigenous Health in a Global World

The health conditions of Indigenous peoples in different regions of the world; social and biological factors that contribute to greater risk and poor health; strategies of Indigenous peoples to restore health to their peoples.

Prerequisite(s): HLTH 2001 and HLTH 2003, or permission of the department.

Lecture and seminar three hours per week.

HLTH 3103 [0.5 credit]**Health Policy and Canada's Health Care System**

The history of Canada's health care system. The model of financing and intergovernmental responsibilities. Current and emerging policy debates facing our health care system, and the role of scientific evidence in decision-making and policy development.

Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.

Lecture and seminar three hours per week.

HLTH 3104 [0.5 credit]**Regulatory Issues and Human Health**

The general principles of health regulatory policies in Canada. The role of scientific evidence in developing legislation and regulations at different levels, including probable levels of risk, standards of evidence, cost-benefit analysis, ethical considerations, psychosocial factors influencing risk management and compliance, and evolving technologies.

Prerequisite(s): HLTH 1000 or HLTH 1001, or permission of the department.

Lecture and seminar three hours a week.

HLTH 3201 [0.5 credit]**Epidemiology**

Basic concepts of epidemiologic study designs and measures; inferences that are fundamental to the identification of causes and prevalence of diseases. Specialized issues within epidemiology including gene-environment interactions and the clustering of specific disease phenotypes.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 2507 and HLTH 2001, or permission of the department.

Lecture three hours a week, lab/workshop two hours a week.

HLTH 3302 [0.5 credit]**Immunity and Immune-Related Disorders**

Basic processes relevant to the immune system; the relationship between immune activity and functioning as related to the development of particular pathologies, such as virally-related illness, autoimmune disorders, inflammatory illnesses, and interactions with social and economic factors that promote immune-related disturbances.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 2002 and BIOL 2200 or permission of the department.

Lecture three hours a week, laboratory four hours a week. Labs require regular participation outside of the scheduled lab time.

HLTH 3303 [0.5 credit]**Molecular and Cellular Pathology II**

Advanced concepts in cell signaling and function, cell injury and death, tissue structure and wound healing and repair. This course will integrate genetic, biochemical and physiological mechanisms that contribute to health and disease.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 2002.

Lecture three hours a week, lab four hours a week.

HLTH 3401 [0.5 credit]**Diseases of Childhood**

Epidemiological, psychological and physiological basis for disease in childhood and adolescence. Topics will be discussed from a global and Canadian perspective and include the medicalization of these diseases.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.

Lecture three hours a week.

HLTH 3402 [0.5 credit]**Diseases of Aging**

Aging is accompanied by increased illness related to cardiovascular, immune and neurodegenerative processes. This course assesses the fundamental mechanisms that determine these pathological conditions. Molecular mechanisms and psychosocial determinants; intervention and therapeutic strategies.

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of department.

Lecture three hours a week.

HLTH 3403 [0.5 credit]**Gender and Health**

The role of gender on psychosocial and biological mechanisms that alter the course of disease and treatment; health issues unique to women (e.g., reproductive and maternal health); the role of gender across cultures.

Prerequisite(s): HLTH 2002 and HLTH 2003, or permission of the department.

Lecture and seminar three hours a week.

HLTH 3404 [0.5 credit]**Psychosocial and Biological Interactions in Health**

The psychosocial and biological mechanisms that interact to influence health outcomes. Cultural, political, socioeconomic, and psychological factors that can impact the biological mechanisms underlying both mental and physical health; epigenetic and genetic alterations; implications for psychosocial interventions.

Precludes additional credit for HLTH 4402 (no longer offered).

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.

Lecture and seminar three hours a week.

HLTH 3503 [0.5 credit]**Disability and Chronic Health Conditions**

An interdisciplinary view of disability and chronic health conditions, including risk factors, prevalence, and the trajectory of such conditions. Functional impact based on life stage. Strategies for health promotion, prevention, accommodations, treatment, and rehabilitation.

Prerequisite(s): HLTH 2002 and HLTH 2003 or permission of the department.

Lecture three hours a week.

HLTH 3901 [0.5 credit]**Emerging Issues in Health Sciences I**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses, and for skills development including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3902 [0.5 credit]**Emerging Issues in Health Sciences II**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3903 [0.5 credit]**Emerging Issues in Health Sciences III**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3904 [0.5 credit]**Emerging Issues in Health Sciences IV**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 3905 [0.5 credit]**Emerging Issues in Health Sciences V**

These courses enable students to develop an understanding of the current state of research and practice in Health Sciences. They provide the opportunity to bring together knowledge from other courses and for skills development, including teamwork, communication and critical thinking.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and above in the BHSc program, an overall CGPA of at least 8.5 and permission of the Department of Health Sciences.

Seminars three hours a week.

HLTH 4101 [0.5 credit]**Global Health Governance**

Contemporary issues and debates in global health governance and effects on health monitoring and outcomes at individual and population levels. Historical patterns of global health, its regulatory framework, principal coordinating mechanisms and emerging challenges, and implications of globalization and international trade policies.

Prerequisite(s): HLTH 3101, or permission of the department.

Lecture and seminar three hours per week.

HLTH 4102 [0.5 credit]**New Health Technologies**

Overview of new and emerging health technologies, including medical and assistive devices, diagnostics and screening, genetics, reproduction, tissue regeneration, imaging, and health informatics. Health technology assessment methods and issues. Regulatory, ethical and social implications; considerations in the developing world.

Prerequisite(s): HLTH 1000 or HLTH 1001 and third-year standing or higher, or permission of the department.

Also offered at the graduate level, with different requirements, as HLTH 5350, for which additional credit is precluded.

Lecture and seminar three hours a week.

HLTH 4201 [0.5 credit]**Applied Health Statistics**

Statistics concepts and procedures used in the analysis of health data; techniques commonly used to analyze data collected from different types of epidemiological and experimental study designs; how to interpret and present statistical findings.

Includes: Experiential Learning Activity

Prerequisite(s): HLTH 3201 and STAT 2507 or permission of the department.

Lecture three hours a week, lab/workshop two hours a week.

HLTH 4202 [0.5 credit]**Health Program Evaluation Tools and Methods**

Introduction to concepts, principles and processes of evaluating health care programs and interventions. Methodological tools including needs assessment, project management skills, use of health information management databases. Issues in communication with stakeholders, including change management and decision making.

Prerequisite(s): HLTH 2001 and STAT 2507 or permission of the department.

Lecture and seminar three hours a week.

HLTH 4301 [0.5 credit]**Pandemics and Infectious Disease**

Factors that influence disease processes, including viruses, bacteria, protozoa, fungi and infectious agents, how these agents come to have the effects that they do in a given individual, how they spread within and how to limit their spread.

Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department.

Lecture three hours a week.

HLTH 4302 [0.5 credit]**Inflammatory and Endocrine Factors in Diseases**

Inflammatory and hormonal processes and their relevance to disease states. Immune-related disorders, heart disease and stroke, metabolic syndrome, diabetes, psychiatric conditions, and neurodegenerative disorders. The contribution of psychosocial and genetic factors to diseases.

Prerequisite(s): HLTH 3302 or BIOL 4200 or BIOC 4200 or permission of the department.

Lecture three hours a week.

HLTH 4303 [0.5 credit]**Fundamentals in Pharmacology and Toxicology**

Introduction to pharmacological principles, xenobiotics and their interactions within living systems. Topics include biological mechanisms of action of xenobiotics on macromolecules, cells and their effects on various organ systems. Social, legal and governmental policies will be discussed.

Prerequisite(s): HLTH 3303 or permission of the department.

Lecture and seminar three hours a week.

HLTH 4304 [0.5 credit]**Host-Pathogen Interactions**

Advanced cellular and molecular mechanisms governing host-pathogen interactions and their contribution to disease. Exploration of immune signaling and recognition, virulence factors, antimicrobial resistance and research techniques used in this field.

Prerequisite(s): HLTH 2004 and HLTH 3302 or permission of the department.

Also offered at the graduate level, with different requirements, as HLTH 5403, for which additional credit is precluded.

Seminar three hours per week.

HLTH 4401 [0.5 credit]**Maternal and Perinatal Determinants of Health**

The integrated genetic, physiologic and environmental events occurring in early life that impact pregnancy, fetal/infant development and disease risk throughout the lifecourse, with a focus on the mechanisms driving these events.

Prerequisite(s): HLTH 2003 and HLTH 3302 or permission of the department.

Lecture three hours a week.

HLTH 4502 [0.5 credit]**Disabilities and Disorders Related to Sensory Nervous System**

Congenital and acquired disabilities related to sensory organs and processes, including visual and hearing impairments, vestibular and balance disorders, reflex problems, and others. Interdisciplinary approach to causes, mechanisms, accessibility, accommodations and interventions.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 3501 (no longer offered).

Prerequisite(s): Either 1) HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306), or 2) NEUR 3206, or 3) permission of the department.

Lecture three hours a week, workshop two hours a week.

HLTH 4503 [0.5 credit]**Trauma-related Disability and Impairments**

Biomedical and psychosocial factors associated with trauma-related illnesses, stressors, injuries and disabilities, including traumatic brain injury, spinal cord injury, fractures, amputations, burns, post-traumatic stress disorder, and others. Short- and long-term considerations for care and rehabilitation.

Precludes additional credit for HLTH 3502 (no longer offered).

Prerequisite(s): HLTH 3503 and (BIOL 2005 or BIOL 3305 or BIOL 3306) or permission of the department.

Lecture three hours a week.

HLTH 4601 [0.5 credit]**Environmental Pollution and Health**

Introduction to environmental and occupational health; detection, assessment, management and mitigation of chemical, physical and biological hazards.

Prerequisite(s): HLTH 3104 or permission of the department.

Lecture and seminar three hours a week.

HLTH 4701 [0.5 credit]**Knowledge Translation**

The application of knowledge translation in the formulation of policy and the development of skills required to maximize the impact of scientific findings through real world programs and policies and communication skills for diverse audiences.

Prerequisite(s): fourth-year standing and permission of the Department of Health Science and permission of the instructor.

Also offered at the graduate level, with different requirements, as HLTH 5300, for which additional credit is precluded.

Seminar three hours a week.

HLTH 4901 [0.5 credit]**Directed Studies in Health**

Independent study, open to third- and fourth-year students to explore a particular health related topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the B.H.Sc. program, in addition to permission of the Faculty supervisor and the Department of Health Sciences.

HLTH 4906 [1.0 credit]**Capstone course – Research Essay**

Independent critical review and research proposal on a health- related topic, using library, database and/or bioinformatics resources, under the supervision of the course instructor. Seminar topics include identification and critical review of resources, development of scientific writing skills, and formulation of health science-related research.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4907, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.

Prerequisite(s): fourth-year standing in the B.H.Sc. Honours and permission of the Department of Health Sciences.

Lecture/seminar three hours a week.

HLTH 4907 [1.0 credit]**Capstone Course – Group Research Project**

A collaborative project on a health related topic. Students, working together as a team, will complete a research project and develop communication and research skills under the supervision of the faculty supervisor. Evaluation will be based on a written report and oral presentation.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4906, HLTH 4908 (no longer offered), HLTH 4909, HLTH 4910.

Prerequisite(s): fourth-year standing in the B.H.Sc.

Honours program, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 9.0, and permission of the Faculty supervisor and the Department of Health Sciences.

Seminars three hours a week as scheduled by the course instructor; other hours as arranged with the Faculty Adviser.

HLTH 4909 [1.0 credit]**Capstone Course – Field Placement and Research Project**

Field placement providing practical experience in a health-related field. Placements may be in institutional or community settings, governmental or non-governmental organizations. Sites may vary each year. Evaluation based on a written report and an oral presentation.

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908 (no longer offered), HLTH 4910.

Prerequisite(s): fourth-year standing in B.H.Sc. Honours; and one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905; and a minimum Overall and Major CGPA of 9.0; and permission of the Department of Health Sciences.

Schedules may vary depending on the field placement site, but students are required to spend a minimum of eight hours per week on-site and attend required seminars as arranged by the course instructor.

HLTH 4910 [1.0 credit]**Honours Individual Research Thesis**

An independent health related research project under the direct supervision of a faculty member. Evaluation will be based on a written thesis and oral poster presentation (oral or poster).

Includes: Experiential Learning Activity

Precludes additional credit for HLTH 4906, HLTH 4907, HLTH 4908, HLTH 4909.

Prerequisite(s): fourth-year standing in B.Sc. Honours Health Sciences, one of HLTH 3901, HLTH 3902, HLTH 3903, HLTH 3904 or HLTH 3905, a major CGPA of at least 10.0, and permission of the Faculty advisor and the Department of Health Sciences. Permission will depend, in part, on capacity, such that meeting the minimum requirements does not guarantee enrollment in this research thesis course.

History (HIST)

History (HIST) Courses

Please note: not all of the following courses are offered in a given year. Consult the public class schedule at Carleton Central for the most up-to-date offerings. For further details concerning courses, see the departmental website at carleton.ca/history.

4000-level History **seminars** have limited enrolment.

Priority in enrolment is given to students in History Honours and Combined Honours programs.

Topics in 4000-level History **seminars** change from year to year. Current topics are posted on the department's website at carleton.ca/history

HIST 1001 [1.0 credit]

The Making of Europe

A survey of the major events, ideas and movements that have shaped Europe from Antiquity to the 21st century. (Field a or b).

Lectures/groups three hours a week.

HIST 1002 [1.0 credit]

Europe in the 20th Century

An introduction to some of the major ideological, political, diplomatic, military, social, cultural and economic developments that have shaped contemporary Europe. (Field b).

Lectures/groups three hours a week.

HIST 1010 [0.5 credit]

History of Northern Canada

A historical introduction to northern Canada from pre-contact times to the present. Open only to students in the Nunavut Public Administration certificate program. (Field c).

HIST 1301 [0.5 credit]

Conflict and Change in Early Canadian History

This course explores how colonialism and conflict altered peoples, cultures, and places in what came to be called Canada from pre-contact to the first age of industrialization. Course covers subjects including imperialism, Indigenous-settler relations, slavery, migration, and government, providing context for contemporary issues. (Field c).

Precludes additional credit for HIST 1300 (no longer offered).

Lectures/groups three hours a week.

HIST 1302 [0.5 credit]

Rethinking Modern Canadian History

This course explores how major political, economic, legal, social, and cultural changes shaped modern-day Canada from the late 1800s to the present. It provides context for contemporary issues, including colonialism, redress, reconciliation, race relations, migration and urbanization, globalization, technology, and the environment. (Field c).

Precludes additional credit for HIST 1300 (no longer offered).

Lectures/groups three hours a week.

HIST 1707 [1.0 credit]

World History

This course will follow the global community from 1400 to the present exploring how global connections, movements and trends have shaped our world with a particular focus on the non-western world. (Field a or d).

Lectures/groups three hours a week.

HIST 1900 [0.5 credit]

Topics in History

A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic).

Lectures/groups three hours a week.

HIST 2000 [1.0 credit]

Medieval Europe

The history of medieval Europe from the fourth to the fifteenth century. (Field a).

Precludes additional credit for HIST 2001 and HIST 2002 (no longer offered).

Lectures/groups three hours a week.

HIST 2204 [0.5 credit]

Early Modern Europe 1350-1650

A survey of the major social, political and cultural developments in continental Europe from the 14th to the 17th centuries. (Field a).

Precludes additional credit for HIST 2203 (no longer offered).

Lectures/groups three hours a week.

HIST 2206 [0.5 credit]

Early Modern Europe 1600-1800

A survey of the major social, political and cultural developments in continental Europe during the 17th and 18th centuries. (Field a).

Precludes additional credit for HIST 2203 (no longer offered).

Lectures/groups three hours a week.

HIST 2207 [1.0 credit]

Nineteenth-Century Europe

A study of critical episodes in the history of continental Europe during the nineteenth century. Themes may include the struggles for democracy in France, modernizing reform in Russia, and national unification in Italy and Germany. (Field b).

Lectures/groups three hours a week.

HIST 2301 [0.5 credit]

Canadian Political History

An historical survey of political experiences in Canada. (Field c).

Precludes additional credit for HIST 2303 (no longer offered).

Lectures/groups three hours a week.

HIST 2304 [1.0 credit]**Social and Cultural History of Canada**

A thematic exploration of how the spaces of home, work, and play have been historically produced, understood, and experienced in Canada. (Field c).

Lectures/groups three hours a week.

HIST 2308 [0.5 credit]**Colonial Latin America**

From ancient civilizations to the era of Independence, this class follows conquest, colonization and development of national identity in the countries of Latin America. (Field d). Precludes additional credit for HIST 2307 (no longer offered).

Lectures/groups three hours a week.

HIST 2309 [0.5 credit]**Modern Latin America**

From the Wars of Independence until the end of the twentieth century, this class follows the emergence of Latin American nations, their economies, politics, culture and international relations. (Field d).

Precludes additional credit for HIST 2307 (no longer offered).

Lectures/groups three hours a week.

HIST 2311 [0.5 credit]**Environmental History of Canada**

A survey of Canadian history considering nature, landscape and geography. Topics include the history of energy regimes and climate change; Indigenous ecological knowledge; colonization and settlement; resource extraction; commodity production; environmental policies and movements. (Field c or e).

Precludes additional credit for HIST 2310 (no longer offered).

Lectures/groups three hours a week.

HIST 2312 [0.5 credit]**History of the Indian Ocean World**

The Indian Ocean is one of the oldest maritime highways in the history of humanity and also an epicentre of global economy in the pre-modern world. The aim of the course is to familiarize students with the non-Western antecedents of modern global history. (Field d).

Precludes additional credit for HIST 3716 (no longer offered).

Lectures/groups three hours a week.

HIST 2401 [0.5 credit]**History of the United States to 1865**

A survey of United States politics and society from the American Revolution to the Civil War. (Field c).

Precludes additional credit for HIST 2400 (no longer offered).

Lectures/groups three hours a week.

HIST 2402 [0.5 credit]**History of the United States from 1865**

A survey of United States politics and society from Reconstruction to the era of globalization. (Field c).

Precludes additional credit for HIST 2400 (no longer offered).

Lectures/groups three hours a week.

HIST 2502 [0.5 credit]**Modern Britain**

A survey of significant political and social developments in Britain from the 18 th to the late 20 th century. (Field b).

Precludes additional credit for HIST 2500 [1.0], no longer offered.

Lectures/groups three hours a week.

HIST 2506 [0.5 credit]**Introduction to Women's and Gender History**

An introductory study of women's and gender history.

Themes may include sexuality, masculinity, women's activism, consumer culture, religion, and reproductive rights. Geographic and temporal focus varies from year to year. (Field e).

Precludes additional credit for HIST 2504 (no longer offered).

Lectures/groups three hours a week.

HIST 2508 [0.5 credit]**War, Politics, and Society in Twentieth-Century Global France**

A study of France in global context from the late 19th century to the present. Topics include the First and Second World Wars, colonialism and decolonization, the Algerian War, youth culture and protest, and memory and commemoration. (Field b).

Precludes additional credit for HIST 2505 (no longer offered).

Lectures/groups three hours a week.

HIST 2510 [0.5 credit]**19th-Century Germany**

The social, cultural, and political history and impact of German nationhood. Topics include the rise of social democracy and the feminist movements, alliance and empire building, scientific racism, sexology, and the emancipation and assimilation of German Jews into the body politic. (Field b).

Precludes additional credit for HIST 2509 (no longer offered).

Lectures/groups three hours a week.

HIST 2511 [0.5 credit]**20th-Century Germany**

A survey of social, cultural, and political tensions and developments in Germany from World War One to the Fall of the Berlin Wall. (Field b).

Precludes additional credit for HIST 2509 (no longer offered).

Lectures/groups three hours a week.

HIST 2600 [1.0 credit]**History of Russia**

A survey of Russian history from the rise of Kievan Rus in the 10th century to post-Soviet Russia in the 21st, with emphasis on political systems and the lives of ordinary people. (Field a or b).

Lectures/groups three hours a week.

HIST 2706 [0.5 credit]**Ancient and Pre-Colonial Africa**

Ancient African cultures and civilizations, the trans-Saharan trade system, and the trans-Atlantic and Indian Ocean slave trades from 600 BCE to the 19th century. (Field d).

Precludes additional credit for HIST 2705 (no longer offered).

Lectures/groups three hours a week.

HIST 2707 [0.5 credit]**Modern Africa**

The conquest and colonization of African polities by the European imperial powers from the late 19th century, the 20th century wars of decolonization, and the emergence of independent African nations, including their economies, politics, and culture. (Field d).

Precludes additional credit for HIST 2705 (no longer offered).

Lectures/groups three hours a week.

HIST 2710 [0.5 credit]**Introduction to Caribbean History**

Introduction to the history of the Caribbean that examines the indigenous populations, the role of colonialism and slavery in the construction of plantation societies, the impact of emancipation, and the social, cultural, economic, and political dynamics of the Caribbean in the post-emancipation period. (Field d).

Precludes additional credit for HIST 2704 (no longer offered).

Lectures/groups three hours a week.

HIST 2802 [0.5 credit]**War and Society in Modern Europe, 1789-1914**

A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).

Precludes additional credit for HIST 2801 (no longer offered).

Lectures/groups three hours a week.

HIST 2803 [0.5 credit]**War and Society in Modern Europe, 1914-1950**

A thematic study of the experience of war and its consequences. The European country or region to be studied, will vary from year to year. (Field b).

Precludes additional credit for HIST 2801 (no longer offered).

Lectures/groups three hours a week.

HIST 2806 [1.0 credit]**History of Japan**

A survey of Japanese history from the legendary beginning of the country in 660 B.C. to the end of World War Two. (Field a or d).

Lectures/groups three hours a week.

HIST 2809 [0.5 credit]**The Historian's Craft**

Lectures and workshops on historical methods and materials. Topics will include the discovery, evaluation, use and analysis of documents in historical context, non-documentary evidence, statistics, and bibliographical tools.

Includes: Experiential Learning Activity

Precludes additional credit for HIST 2808 [1.0 credit], no longer offered.

Prerequisite(s): open only to History majors with at least second-year standing.

Lectures/groups three hours a week.

HIST 2811 [0.5 credit]**Public History from Memory to Museums**

Historical representation in the public arena and public engagement with the past, including archives, museums, films, novels, and video games. This course will involve online work, collaborative projects, and field trips. (Field e).

Includes: Experiential Learning Activity

Lectures three hours a week or online.

HIST 2812 [0.5 credit]**Special Subject in Public History**

A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e).

Lectures three hours a week.

HIST 2902 [0.5 credit]**Origins of the Greeks**

The history of ancient Greece from the Bronze Age through the Archaic period. (Field a).

Also listed as CLCV 2902.

Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2903 [0.5 credit]**Democracy to Alexander**

The history of ancient Greece from the classical period to Alexander. (Field a).

Also listed as CLCV 2903.

Precludes additional credit for CLCV 2900, HIST 2900 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2904 [0.5 credit]**Rise of the Roman Empire**

The history of ancient Rome from early Rome to the end of the Republic (Field a).

Also listed as CLCV 2904.

Precludes additional credit for CLCV 2901 and HIST 2901 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2905 [0.5 credit]**Rome of the Caesars**

The history of ancient Rome from the end of the Republic to the coming of Islam. (Field a).

Also listed as CLCV 2905.

Precludes additional credit for CLCV 2901, HIST 2901 (no longer offered).

Prerequisite(s): second-year standing or permission of the unit.

Lectures three hours a week.

HIST 2910 [0.5 credit]**Special Subject in History**

A lecture course on a special topic, theme, or period. Topic varies from year to year. (Field will depend on topic).

Lectures/groups three hours a week.

HIST 2912 [0.5 credit]**Science and Technology in History**

Major findings and discussions about the role of science and technology in the past. Topic and time period will vary. (Field a, b, or e).

Precludes additional credit for HIST 2911 (no longer offered).

Lectures/groups three hours a week.

HIST 2913 [0.5 credit]**History of Oil**

Explores the history of oil from the ancient period to the present day. The course uses a transnational approach designed to introduce students to the interconnected histories of oil in countries across the world. (Field e).

Includes: Experiential Learning Activity

Lectures three hours a week.

HIST 3000 [0.5 credit]**Topics in Ancient History**

A study of a selected topic in ancient history. (Field a).

Also listed as CLCV 3000.

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3001 [0.5 credit]**History at the Movies**

Considering opportunities offered by historical feature film in the representation of the past, focusing on how historical themes and subjects have been treated in feature films, cinematic uses of the past, the role of film in shaping public memory and understanding the past. (Field e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3005 [0.5 credit]**Medieval Aristocratic Life**

A general examination of the life of European ruling elites from the ninth to the 13th century, with special reference to the Anglo-Norman and French experiences of noble power, conduct, and prestige. (Field a).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3006 [0.5 credit]**Medieval Religious Life**

A general examination of European religious life from the fourth to the fourteenth centuries, with special reference to the cultural and intellectual worlds of medieval monks, nuns, and clerics. (Field a or e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3007 [0.5 credit]**Medieval Intellectual Life**

A general examination of medieval European intellectual life during the High and Late Middle Ages, with special reference to its setting in the cathedral school and university. (Field a or e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3009 [0.5 credit]**Studies in Greek History**

Study of a period or theme in Greek History. (Field a).

Also listed as CLCV 3201.

Prerequisite(s): CLCV 2902 and CLCV 2903 or HIST 2902 and HIST 2903 or permission of the unit. Permission of the unit is required to repeat this course.

Lectures three hours a week.

HIST 3010 [0.5 credit]**The Later Roman Empire**

The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire. (Field a).

Also listed as CLCV 3010.

Precludes additional credit for HIST 3002 (no longer offered).

Prerequisite(s): a 2000-level Classical Civilization course.

Lecture three hours a week.

HIST 3101 [0.5 credit]**Studies in Roman History**

Study of a period or theme in Roman History. (Field a).

Also listed as CLCV 3202.

Prerequisite(s): CLCV 2904 and CLCV 2905 or HIST 2904 and HIST 2905 or permission of the unit. Permission of the unit is required to repeat this course.

Lectures three hours a week.

HIST 3102 [0.5 credit]**Queer(ing) Archives**

Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives. (Field e).

Also listed as SXST 3106.

Prerequisite(s): third-year standing.

Seminar three hours a week.

HIST 3105 [0.5 credit]**Renaissance Europe**

The political and cultural history of Europe in the fourteenth, fifteenth and sixteenth centuries, with emphasis on the Italian Renaissance and its diffusion into England and France. (Field a).

Precludes additional credit for HIST 2105 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3106 [0.5 credit]**Social History of Sexuality**

Sexuality in Western society, Middle Ages to the present.

Themes include attitudes and behaviour; regulation of sexuality; gender; heterosexuality and homosexuality; prostitution; pornography; the politics of sex: stresses continuities and changes and the understanding of sexuality in contexts of place, class, gender, culture. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3109 [0.5 credit]**Social History of Alcohol**

Alcohol in Western society from Ancient times to the present. Production, trade, and consumption of alcohol; religious and social significance; class, gender, and health; drinking cultures; policies toward drunkenness, and alcoholism. Specific topics include comparative trends, temperance movements, and prohibition. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3110 [0.5 credit]**The Cultural History of Food**

Food in its agrarian, economic and cultural context from late antiquity to the nineteenth century; production, distribution, and consumption; health, diet and manners; the religious significance of food; food in art; the rise of the restaurant; the birth of gastronomy. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3111 [0.5 credit]**History of Humanitarian Aid**

History of humanitarian activities and agencies, both governmental and non-governmental, with particular attention to Canadian involvement. The first half is devoted to early humanitarian traditions, the second to specific agencies such as the Red Cross, Oxfam, Christian Aid, Save the Children and UNICEF. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3113 [0.5 credit]**Revolution and Society in France, 1789-1799**

A survey of the French Revolution (1789-99) focusing on attempts to regenerate France and the French through political, economic and cultural reforms. Themes include nationalism, republicanism, violence, legal reform, property redistribution, education, population and family policy, gender, and religion. (Field b).

Precludes additional credit for HIST 3108 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3115 [0.5 credit]**Childhood and Youth in History**

The role of childhood and youth in modern history. Topics may include children's and young people's relationship to work, education, play, sexuality, the welfare state, war, politics, delinquency, leisure, migrations, and popular culture. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3116 [0.5 credit]**History of Disability**

History of disability including the representation and understanding of disability as it changes over time and as it is portrayed and experienced in changing cultural contexts. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history or in Disability Studies.

Lectures three hours a week.

HIST 3120 [0.5 credit]**History of the Body**

The ways in which the human body has been viewed, interpreted, controlled, tended, healed, exercised, measured, pleased, clothed, and reproduced to create representations of social, political, and cultural relationships. Regions and periods will vary. (Field e).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3205 [0.5 credit]**Canadian Business History**

The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business-government relations). (Field c).
Also listed as BUSI 4608.
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3206 [0.5 credit]**Place and Politics in Canadian History**

An exploration of selected topics in the history of one of Canada's regions. Topic varies from year to year. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3209 [0.5 credit]**Canadian Urban History**

Introduction to urban growth and development in Canada. The historical basis of the urban pattern and its influence in Canada and the internal structure and institutions of Canadian cities. Ottawa is used as a case study. (Field c).
Includes: Experiential Learning Activity
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3215 [0.5 credit]**Ancient Greek Science**

The history of Greek physical science from the Presocratics to Ptolemy. (Field a or e).
Also listed as CLCV 3215.
Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3216 [0.5 credit]**The Scientific Revolution**

The history of astronomy and physics from Copernicus to Newton. (Field b or e).
Precludes additional credit for HIST 2201 or HIST 3210 (no longer offered).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3217 [0.5 credit]**Empire and Globalization**

Varieties of European imperialism from the early modern period to the present. The role of imperialism and anti-imperialism in the development of globalization and European modernity. Comparison of various empires and the transnational linkages between them. (Field b).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3220 [0.5 credit]**Canadian Economic History**

A survey of Canadian economic history from the sixteenth century to the present. (Field c or e).
Also listed as ECON 3220.
Precludes additional credit for ECON 2305 or HIST 2305 (no longer offered), ECON 3203 (no longer offered), ECON 3202 or HIST 3203 (no longer offered), and ECON 3207 or HIST 3204 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

HIST 3230 [0.5 credit]**Selected Topics in Economic History**

An examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year. (Field e).
Also listed as ECON 3230.
Precludes additional credit for ECON 3005 (no longer offered).
Prerequisite(s): ECON 1001 and ECON 1002, or ECON 1000 or FYSM 1003, or permission of the Department.
Lectures three hours a week.

HIST 3301 [0.5 credit]**Québec Since 1800**

A social, economic, political, cultural and intellectual history of Québec with emphasis on the development of Québec nationalism. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3304 [0.5 credit]**Canada-United States Relations**

An examination of diplomatic, economic, cultural and military relations, with particular attention to the twentieth century. (Field c).
Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.
Lectures three hours a week.

HIST 3305 [0.5 credit]**Crime and State in History**

The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada. (Field e). Also listed as LAWS 3305.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3306 [0.5 credit]**Canada's International Policies**

The development of Canadian attitudes and policies toward international affairs, with emphasis on the 20th century. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3310 [0.5 credit]**Animals in History**

A historical survey of relations between humans and other animals. Topics may include history of domestication; hunting; display of animals in zoos, museums and wildlife films; biotechnology; animal welfare movements; companion species; animals as symbols; question of animal agency. (Field c or e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3406 [0.5 credit]**African-American Women**

An examination of aspects of the social, cultural, and political history of African-American women since the eighteenth century. (Field c or e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3410 [0.5 credit]**Popular Culture in the U.S.**

The development of popular culture in the United States. Focusing on a selected theme or time period, the course will examine how popular culture both shaped and reflected broader historical and social developments.

Topics may include music, theatre, public entertainments, movies, and television. (Field c).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

HIST 3412 [0.5 credit]**Ideas, Culture, and Society in U.S. History**

The intellectual, social, and cultural production of the United States, focusing on, among other things, a series of creative tensions: tradition versus modernity; rural versus urban; white versus black; masculine versus feminine; homogenous versus cosmopolitan. (Field c).

Precludes additional credit for HIST 3904, Topics in U.S. History (offered in the fall terms of 2009, 2011 and 2012).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3413 [0.5 credit]**The United States and Its Borderlands**

A history of the United States, focusing on the interactions along and across its borders with Mexico, Canada, and the Pacific Rim. This course examines the contests that emerged over colonization, migration, and American state-making. (Field c).

Precludes additional credit for HIST 3904 (offered in winter terms of 2017 and 2014, and fall term of 2014).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3414 [0.5 credit]**The United States in the World**

The history of the US in a global context. Time period will vary, topics could include world revolutions, imperialism and decolonization, immigration, transnational flows of ideas and people, war, peace, urbanization, capitalism, international law, and the environment. (Field c).

Precludes additional credit for HIST 3400 and HIST 3405.

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

HIST 3500 [0.5 credit]**Migration and Diaspora in Canada**

A study of migration and settlement in Canada from the 17th century to the present. (Field c).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3505 [0.5 credit]**Women in Canada**

Selected issues in the history of women in Canada. Themes include women and war, aboriginal women's history, sexuality, the women's movement, immigration, and motherhood. Attention will be paid to the social construction of gender and the intersections of gender with class, ethnicity, race. (Field c).

Precludes additional credit for HIST 3504 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3507 [0.5 credit]**An Immigrant's Guide to Canada**

A course that critically engages with programs designed to assist the settlement and integration of newcomers to Canada as well as the lived experiences of immigrants and ethnic and diasporic groups in the Canadian context. (Field c).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Seminars three hours a week.

HIST 3510 [0.5 credit]**Indigenous Peoples of Canada**

A survey of indigenous histories in northern North America from earliest times to the present. The course will cover pre-contact histories; military, economic, social, and cultural encounters with newcomers; indigenous experiences with settler colonialism; and the struggle over decolonization. (Field c).

Precludes additional credit for HIST 3503 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3511 [0.5 credit]**Themes in Indigenous History**

Key themes in the history of North America's indigenous peoples. Topics may include land and treaties, religious encounters, the law, cultural identity, and transnational indigenous experiences (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3515 [0.5 credit]**Madness in Modern Times**

History of madness from the eighteenth century to the present. Themes include changing medical understandings and treatments of mental illness, patients' experiences and accounts of psychiatric institutions and treatments, cultural representations of madness in media, and the history of the asylum. (Field e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3604 [0.5 credit]**Gender and Sexuality in Modern Europe**

Exploration of gender, sexuality, and women's history in Modern Europe. (Field b or e).

Precludes additional credit for HIST 3603 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3704 [0.5 credit]**Aztecs**

An examination of the Aztec social system, culture, religion, and philosophy both before and after the Spanish conquest. (Field a or d).

Prerequisite(s): A 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3708 [0.5 credit]**Reformation Europe**

A history of the Protestant and Catholic Reformations of the sixteenth century, with special emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era. (Field a).

Also listed as RELI 3220.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3710 [0.5 credit]**Themes in Caribbean History**

Key themes in the making of the Caribbean. Topics may include slavery and emancipation, Indian and Chinese migration, colonialism, the independence movement, and race relations. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3712 [0.5 credit]**Mexico: Aztecs to Narcos**

An examination of the social and cultural history of Mexico from indigenous cultures to the problems of the 20th century. Themes include the continuities of indigenous structures, national identity, wars and political violence, and gender. (Field d).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3713 [0.5 credit]**Gender and Sexuality in Latin America**

An exploration of gender and sexualities in Latin America from the pre-conquest period to the end of the twentieth century. (Field d or e).

Precludes additional credit for HIST 3705 and HIST 3707 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3714 [0.5 credit]**The Holocaust: Historical and Religious Dimensions**

Introduction to the historical and religious dimensions of the Holocaust. The foundations, perpetration and consequences of the Nazi Final Solution through primary sources including survivor testimony will be examined. (field b).

Also listed as RELI 3140.

Prerequisite(s): a 2000-level History course or third-year standing and 1.0 credit in History.

Lectures three hours a week.

HIST 3715 [0.5 credit]**Themes in South Asian History**

Key themes in South Asian history. Topics may include the Mughal empire, the British colonial era, the creation and development of states in India, Pakistan, Bangladesh, and Sri Lanka, and various 20th century historical phenomenon. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3717 [0.5 credit]**Gender and Sexuality in Africa**

An exploration of gender and sexualities in Africa from the beginning of colonial rule until the beginning of the 21st century. (Field d or e).

Precludes additional credit for HIST 3711 (no longer offered).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3719 [0.5 credit]**South African War, 1899-1902**

Examines causes, major events and consequences of the war. Themes include: the war as part of the Scramble for Africa, emergence of settler nationalism, British "scorched earth policy", establishment of concentration camps, importance of gender, African involvement, international responses, and long-term effects. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3800 [0.5 credit]**International History 1914-41**

A survey of international history from the First World War to the outbreak of the Second World War, focusing on peacemaking, inter-war diplomacy, anti-imperialism, global capitalism, migration, labour, and the origins of the Second World War. (Field b).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3801 [0.5 credit]**International History 1941-90**

A survey of international history from the Second World War to the end of the Cold War that examines the conflict over the reconstruction of the postwar world, including decolonization, emergence of the European Union, and other dimensions of global order and disorder. (Field b).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3805 [0.5 credit]**Twentieth-Century China**

A political history of China from the 1911 Revolution to the present. Emphasis on the development of Chinese communism and the People's Republic since 1949. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3806 [0.5 credit]**Japan Since 1945**

A political, intellectual and economic history of Japan in the twentieth century, concentrating on the period since the end of the Pacific War. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3807 [0.5 credit]**Practicum in History**

An historical research project in a museum or public institution in the Ottawa area conducted under the supervision of the external institution and the History Department. Work includes reading, reports, and meetings. Students should be prepared to devote one day a week to the project.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in a History program, a CGPA of 9.00 or better in history courses, and permission of the Department.

HIST 3809 [0.5 credit]**Historical Representations**

An examination of how historical narratives have been produced in relation to sites of public memory. The public presentation of history through a wide range of themes, which may include museum exhibits, commemorations and popular culture. (Field e).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3810 [0.5 credit]**Historical Theory**

An examination of a wide range of theoretical approaches to history, and a critical reflection on history as a discipline. Prerequisite(s): HIST 2809 or permission of the Department.

Lectures two hours a week and one hour discussion group.

HIST 3812 [0.5 credit]**Digital History**

The digital representation of history, exploring the approaches, issues, and methods of working in this environment. Topics may include gaming, virtual environments, digital research tools, public digital history. (Field e).

Includes: Experiential Learning Activity

Also listed as DIGH 3812.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3813 [0.5 credit]**Problems in Global and Transnational Histories**

Historical encounters across geographical regions and ways in which historians studied them. Categories of "national," "international," "transnational," "world," and "global" history will be evaluated. Themes include: imperialism, postcolonialism, the environment, migration, trade, religion, the body, war, culture, disease. (Field d or e).

Includes: Experiential Learning Activity

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history including at least 0.5 credit in Field d courses (Asia, Africa, the Caribbean, and Latin America).

Lectures three hours a week.

HIST 3814 [0.5 credit]**Crafting Digital History**

This course applies the creative use of information and media/computing technologies to address the digital cultural heritage issues of public historians, archaeologists, and anthropologists. Topics may include webscraping, data mining, designing and implementing research databases, and visual storytelling of those results. (Field e).

Includes: Experiential Learning Activity

Also listed as DIGH 3814.

Precludes additional credit for HIST 3907 Section "B" offered in winter 2015 and HIST 3907 Section "O" offered in winter 2016.

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week or online.

HIST 3815 [0.5 credit]**Group Practicum**

A class-based group historical research project done in collaboration with an external institution under the supervision of the institution and the Department. Work includes readings, reports, and meetings. Students should be prepared to devote one full day per week to the project. (Field e).

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in a History program and permission of the Department.

HIST 3820 [0.5 credit]**Explorations in Historical Theory**

Taking a specific historical topic as its focus, this course examines how historians have applied a wide range of theoretical approaches in order to understand and interpret that topic's historical significance. Topics will vary.

Prerequisite(s): HIST 2809, or permission of the unit.

Lectures two hours a week and one hour discussion group.

HIST 3902 [0.5 credit]**Topics in European History**

A lecture course on a special topic in European history.

Topic varies from year to year. (Field will depend on topic.)

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3903 [0.5 credit]**Topics in Canadian History**

A lecture course on a special topic in Canadian history.

Topic varies from year to year. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3904 [0.5 credit]**Topics in U.S. History**

A lecture course on a special topic in United States history.

Topic varies from year to year. (Field c).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3905 [0.5 credit]**Topics in International History**

A lecture course on a special topic in international political or economic history. Topic varies from year to year. (Field b).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3906 [0.5 credit]**Topics in World History**

A lecture course on a special topic in African, Asian, Caribbean, or Latin American history. Topic varies from year to year. (Field d).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3907 [0.5 credit]**Transnational Topic**

A lecture course on a special topic that takes a transnational approach to history. Course content will vary from year to year. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3908 [0.5 credit]**Thematic Topic**

A lecture course on a special topic that takes a thematic approach to history. Course content will vary from year to year. (Field e).

Prerequisite(s): a 2000-level history course or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3909 [0.5 credit]**Topic in Public History**

A lecture course on a special topic, theme, or period in public history. Topic varies from year to year. (Field e).

Prerequisite(s): a 2000-level history course, or third-year standing and 1.0 credit in history.

Lectures three hours a week.

HIST 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

HIST 4006 [1.0 credit]**Seminar in Medieval History**

An examination of a selected problem in the history of medieval Europe.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4007 [0.5 credit]**Medieval History**

Selected topic in Medieval History. The topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4100 [1.0 credit]**Seminar in Early Modern European History**

A study of a selected problem in the history of Europe during the early modern period.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4101 [0.5 credit]**Early Modern European History**

Selected topic in the history of Europe during the early modern period. The topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4200 [1.0 credit]**Seminar in European History**

Examination of a selected problem or period in the history of Continental Europe.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4201 [0.5 credit]**Modern European History**

Selected topic in the history of Europe. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4210 [0.5 credit]**Topics in Ancient History**

Intended for Honours students in History and Classics who should normally be in their third- or fourth-year.

Also listed as CLCV 4210.

Precludes additional credit for CLCV 4209, HIST 4209 (no longer offered).

Prerequisite(s): CLCV 2902 (HIST 2902) and CLCV 2903 (HIST 2903) or CLCV 2904 (HIST 2904) and CLCV 2905 (HIST 2905) or CLCV 3201 (HIST 3009) or CLCV 3202 (HIST 3101) or permission of the Department.

Seminar three hours a week.

HIST 4302 [1.0 credit]**Canada: Ideas & Culture**

A seminar on ideas, culture, and society in Canada.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4303 [0.5 credit]**Society and Culture in Canada**

A 0.5 credit seminar course that examines a selected topic on ideas, culture, and society in Canada. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History, or permission of the Department.

Seminar three hours a week.

HIST 4304 [1.0 credit]**Canada: Politics & Society**

A seminar on politics and society in Canada.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4305 [0.5 credit]**Political History in Canada**

A 0.5 credit seminar course that examines a selected topic on politics and society in Canada. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4400 [1.0 credit]**Seminar in U.S. History**

An examination of a selected problem or period in the history of the United States.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4401 [0.5 credit]**United States History**

A 0.5 credit seminar course that examines a selected topic in the history of the United States. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4500 [1.0 credit]**Seminar in British History**

An explanation of a selected problem or period in the history of Great Britain.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4501 [0.5 credit]**British History**

An explanation of a selected problem or period in the history of Great Britain.

Includes: Experiential Learning Activity

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4505 [1.0 credit]**Seminar in Women's and Gender History**

A seminar on the history of women and gender. The particular approach, themes, and historical period will be specified each year.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4506 [0.5 credit]**Gender, Sexuality and Women's History**

A 0.5 credit seminar course that examines a selected topic on the history of women and gender. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4600 [1.0 credit]**Seminar in Russian History**

An examination of a selected problem or period in the history of Imperial or post-Imperial Russia.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4604 [0.5 credit]**Central Europe, Past and Present**

Evolution and current status of Central Europe from periods of foreign control in the late nineteenth and twentieth centuries to independent statehood. Particular emphasis will be placed on national accommodations and conflicts.

Also listed as EURR 4204.

Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4605 [0.5 credit]**The Balkans in Transition – 1918 to 1989**

The seminar uses the concept of transition to understand the Balkan encounter with modernity and Europe. Key periods to be examined include the interwar era and the period of communist rule, with an emphasis on political, social and economic themes.

Also listed as EURR 4101.

Prerequisite(s): fourth-year standing and one of PSCI 3704, PSCI 3208, PSCI 3209, HIST 2600; or permission of the Department.

Seminar three hours a week.

HIST 4606 [0.5 credit]**Contemporary Europe: From Postwar to the European Union**

History of contemporary Europe from 1945 to present covering both eastern and western halves of the continent and including social, cultural, political, and economic dimensions.

Includes: Experiential Learning Activity

Also listed as EURR 4303.

Prerequisite(s): HIST 3810, fourth-year standing in Honours History or permission of the Department.

Seminars three hours a week.

HIST 4607 [0.5 credit]**Imperial Russia and the Russian Revolution**

Examination of the expansion and downfall of tsarist Russia from the eighteenth century to the revolutionary era and the establishment of Bolshevik rule. Topics include the relationship between the monarchy and subject peoples, social and economic change, and daily life.

Includes: Experiential Learning Activity

Also listed as EURR 4305.

Also offered at the graduate level, with different requirements, as HIST 5607, for which additional credit is precluded.

Seminar three hours a week.

HIST 4608 [0.5 credit]**The Soviet Union**

Examination of the rise of the Soviet Union to a global power and subsequent tensions that promoted its collapse. The course will analyze Stalinism, the Second World War, the Thaw, and Brezhnev and Gorbachev eras through the lens of the USSR's citizens.

Includes: Experiential Learning Activity

Also listed as EURR 4306.

Also offered at the graduate level, with different requirements, as HIST 5608, for which additional credit is precluded.

Seminar three hours a week.

HIST 4700 [1.0 credit]**Seminar in World History**

An examination of a selected problem or period in the history of Asia, Africa, the Caribbean or Latin America.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4701 [0.5 credit]**African History**

A 0.5 credit seminar course that examines a selected topic in the history of Africa. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4702 [0.5 credit]**South Asian History**

A 0.5 credit seminar course that examines a selected topic in the history of South Asia. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4703 [0.5 credit]**The Global South**

A 0.5 credit seminar course that examines a selected topic in the history of the Global South. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4704 [0.5 credit]**Caribbean and Latin American History**

A 0.5 credit seminar course that examines a selected topic in Caribbean and Latin American history. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4705 [0.5 credit]**Asian History**

A 0.5 credit seminar course that examines a selected topic in the history of Asia. The particular topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4802 [1.0 credit]**Seminar in International History**

An examination of a selected problem or period in the history of international relations.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4805 [1.0 credit]**Seminar on a Transnational or Thematic Topic**

A seminar on a transnational or thematic topic. The particular topic will be specified each year.
 Prerequisite(s): HIST 3810 or 3820, fourth-year standing in Honours History or permission of the Department.
 Seminar three hours a week.

HIST 4806 [0.5 credit]**Global, Transnational, or Thematic History**

Selected topic in global and transnational history or on a thematic topic in history. The topic will be specified each year it is offered.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4910 [1.0 credit]**Honours Research Project**

The project will be a substantial piece of original research conducted under the supervision of a faculty member in History. The medium of presentation will be agreed upon between student and supervisor, and may include a research paper, a documentary film, or a web-based project.

Includes: Experiential Learning Activity

Precludes additional credit for HIST 4908, HIST 4909 (no longer offered).

Prerequisite(s): fourth-year standing in History Honours program, a minimum GPA of 9.0 (B+) in the History major, and permission of the department, or in exceptional circumstances with permission of the department only.

HIST 4915 [0.5 credit]**Topics in History**

Intended for Honours students in History. Topics will vary from year to year.

Prerequisite(s): HIST 3810 or HIST 3820, fourth-year standing in Honours History or permission of the Department.

Seminar three hours a week.

HIST 4916 [0.5 credit]**Topic in Public History**

Topics will vary from year to year.

Prerequisite(s): HIST 2811 and fourth-year standing in Honours History, or permission of the Department.

Seminar three hours a week.

HIST 4920 [1.0 credit]**Seminar in Public History**

Topics will vary from year to year.

Prerequisite(s): HIST 2811 and fourth-year standing in Honours History, or permission of the Department.

Seminar three hours a week.

Human Rights (HUMR)

Human Rights (HUMR) Courses**HUMR 1001 [1.0 credit]****Introduction to Human Rights**

Human rights from an interdisciplinary perspective. Topics may include the foundations and nature of rights, roots of inequality and oppression, aboriginal rights, racism, women and rights, sexual orientation, state and corporate power, economic exploitation, the environment and rights, warfare, torture, and social movements.

Includes: Experiential Learning Activity

Precludes additional credit for FYSM 1104.

Lecture and discussion groups/tutorials three hours a week.

HUMR 2001 [0.5 credit]**Human Rights: Theories and Foundations**

Historical overview of the theoretical and philosophical approaches underlying the human rights movement and relevant to the normative ideals and aspirations of human rights and to the strategies of their implementation.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures and discussion groups/tutorials three hours a week.

HUMR 2102 [0.5 credit]**Sexuality, Gender, and Security**

Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how 'subversives' were created through discourse and administrative logics such as policy and law.

Includes: Experiential Learning Activity

Also listed as SXST 2102.

Prerequisite(s): second year standing or permission from the Institute.

Lectures and discussions three hours a week.

HUMR 2202 [0.5 credit]**Power Relations and Human Rights**

The study of power from a critical, transnational perspective; the impact on human rights of different forms and modalities of power, including those emanating from the state and corporations and those implicated in socio-economic and other hierarchical relations.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures and discussion groups/tutorials three hours a week.

HUMR 2301 [0.5 credit]**Human Rights and Sexualities**

Human rights issues in various cultural contexts concerning sex and/or gender, with attention to sexual minorities such as gay, lesbian, and transgendered persons. Forms of discrimination against sexual minorities and the mechanisms and strategies for redress.

Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

HUMR 2401 [0.5 credit]**Political Repression**

Canada is home-in-exile to many who have faced severe and often life-threatening political repression such as imprisonment, torture, surveillance, population transfer, etc. This course examines the impacts on survivors of political repression, and strategies used to overcome its legacies.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

HUMR 2502 [0.5 credit]**Social and Political Movements**

The underlying conditions and developments of historical and contemporary social and political movements; specific social movements such as civil rights or gay rights.

Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

HUMR 3001 [0.5 credit]**Special Topics in Human Rights**

This advanced seminar will cover current and topical issues and/or debates in human rights, and will enable students to engage in focused discussions and analyses of these issues. Topics will vary from year to year.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3002 [0.5 credit]**Right to the City**

"The right to the city" as an emerging focus of advocacy and analysis in urban movements for social justice around especially the local and transnational dimensions of the "right to the city" movement.

Precludes additional credit for HUMR 3001 if taken prior to 2013-14.

Prerequisite(s): third year standing.

Lectures three hours a week.

HUMR 3202 [0.5 credit]**Human Rights and Resistance**

This course problematizes human rights paradigms and critically examines the limitations of the political within liberal democracies. Bringing together theory and politics, alternative approaches to activism are explored. Topics may include struggles grounded in radical democracy, anti-capitalism, and social justice perspectives.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3301 [0.5 credit]**Racialization, Racism and Human Rights**

The forms and effects of systemic race-based human rights abuses. Topics may include immigration and refugee policies and practices, anti-apartheid regimes, racial profiling, the racial politics of "nationhood" and armed conflict, civil rights and resistance movements in differing cultural contexts.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Seminar and discussion groups three hours a week.

HUMR 3302 [0.5 credit]**Culture, Religion, and Women's Human Rights**

The impact of cultural and religious traditions on gender, race, ethnicity and sexuality. Topics may include debates related to power dynamics, historical issues, geopolitics, and cultural relativism.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3303 [0.5 credit]**Children's Rights**

This course examines children's rights from a range of historical, cultural, and global perspectives. Topics may include the rights for Indigenous children, children with disabilities, female, trans and queer children, children in armed conflict and refugees in Canada and transnational contexts.

Includes: Experiential Learning Activity

Also listed as CHST 3303.

Precludes additional credit for CHST 3901 (no longer offered).

Prerequisite(s): third-year standing.

Lectures and discussion groups three hours a week.

HUMR 3304 [0.5 credit]**Disability Rights**

A critical approach to the study of disability rights that explores the intersections of disability with race, sexuality, gender, colonialism, 'health', and other discourses.

Precludes additional credit for HUMR 4303 (no longer offered).

Prerequisite(s): third-year standing.

Lecture three hours a week.

HUMR 3305 [0.5 credit]**Anti-Black Racism**

The course examines conceptual linkages between race, racism and anti-black racism and how anti-Blackness racial prejudice is rooted in Black people's experience of enslavement and colonization.

Lecture three hours a week

HUMR 3401 [0.5 credit]**Histories of Persecution and Genocide**

Case studies in persecution and/or genocide in different cultural contexts. The social, political, and legal conditions that have enabled the institutional or state-sanctioned persecution of targeted groups, and the circumstances that had an impact on their decline.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3501 [0.5 credit]**Social, Economic and Cultural Rights**

The development of social, economic and cultural rights, including rights to housing, healthcare, education and employment. Topics may include the international geopolitics of the historical tension between these rights and civil and political rights.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 3503 [0.5 credit]**Global Environmental Justice**

Overview of critical debates on environmental issues from a global social justice perspective. Topics may include corporate mining, food sovereignty, poverty, economic exploitation, Indigenous cosmologies and environmental justice, militarization and environmental degradation, privatization of water and climate change.

Prerequisite(s): third-year standing.

Lectures and discussion groups three hours a week.

HUMR 3504 [0.5 credit]**Public Health and Human Rights**

Through a social-scientific analysis of AIDS, this course explores HIV/AIDS as a case study for understanding the politics of public health. Students will critically interrogate the authority of science and explore avenues for democratizing biomedicine and public health policy in various national and policy contexts.

Includes: Experiential Learning Activity

Precludes additional credit for HUMR 3001 Section "A" if taken in 2013-14 and 2014-15.

Prerequisite(s): third-year standing.

Lectures three hours a week.

HUMR 4201 [0.5 credit]**Citizenship and Human Rights**

The relationship between citizenship and human rights; how large groups of people, including non-citizens and refugees, are excluded from entitlements to rights.

Why human rights rest on citizenship, and with what implications.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4302 [0.5 credit]**Transgender Human Rights**

Critical analyses of human rights through an examination of transgender subjectivities. The systemic erasure of trans people within society and the struggles of some activists to normalize trans identities.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4305 [0.5 credit]**Disability and Social Justice**

An intersectional national/transnational approach to social justice issues such as poverty/exploitation, labour, representation, decolonization, race/racism, sexuality and gender from a critical disability studies perspective.

Prerequisite(s): fourth-year standing in Human Rights or Disability Studies.

Seminar three hours a week.

HUMR 4401 [0.5 credit]**Gender, Citizenship and Social Justice in a Transnational World**

This seminar critically engages with transnational, gendered, classed, and racialized discursive practices of citizenship, human rights, the geopolitics of knowledge and processes of dehumanization through the lenses of decolonial social justice.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4404 [0.5 credit]**Rights of Refugees and Displaced Persons**

Contemporary issues concerning the rights of refugees and displaced persons, from social, political, and legal perspectives; Canadian and international dimensions of these issues.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar and discussion groups three hours a week.

HUMR 4405 [0.5 credit]**Digital Dis-information and Human Rights**

The course examines the phenomenon of disinformation or 'fake news' in the era of digital technology, its intent and links to structures of power and oppression, and its impacts on human rights and the social justice.

Includes: Experiential Learning Activity

Seminar three hours a week.

HUMR 4409 [0.5 credit]**Counter-terrorism and Human Rights**

Examines policies and strategies states and international organizations use to combat global terrorism and the challenges these initiatives pose to the international human rights regime, democratic norms, and social justice.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar three hours per week.

HUMR 4502 [0.5 credit]**Global Indigenous Knowledges and Movements**

Indigenous Peoples contributions to world knowledge through community resistance, social movements and scholarship. How processes of corporate globalization impact Indigenous Peoples lives as an ongoing process of normalizing a reconfigured modern coloniality of power.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4504 [0.5 credit]**Black Health**

The course examines conceptual linkages between race, racism and anti-black racism and how anti-Blackness racial prejudice is rooted in Black people's experience of enslavement and colonization.

Seminar three hours a week

HUMR 4505 [0.5 credit]**Precarity in Labour and Work**

This course explores how precarious employment and labour arises; the nature and forms of precariousness; how race, citizenship, gender, religion, and location impact precarity; the link between labor and social movements; and types of political and economic initiatives in response to the deepening precarity.

Seminar three hours a week.

HUMR 4602 [0.5 credit]**Is Religious Freedom a Human Right?**

Legal, theoretical, and theological interconnections between religion and human rights. Evaluation of concepts including religious freedom, secularism, public sphere, accommodation and neutrality. Examination of religion and culture, interdependence of legal and religious perspectives, boundaries of religion and state, and religious compulsion. Use of case studies.

Also listed as LAWS 4602, RELI 4602.

Prerequisite(s): fourth-year standing.

Seminars three hours a week.

HUMR 4905 [0.5 credit]**Practicum Placement in Human Rights I**

This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Human Rights or permission of the Institute.

HUMR 4906 [0.5 credit]**Practicum Placement in Human Rights II**

This course provides students with the opportunity to spend one day per week (6-8 hours) working and learning at a human rights-related government, research or advocacy organization. A written report is required at the end of the placement. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Human Rights and a GPA of 9.8 or higher or permission of the Institute.

HUMR 4907 [0.5 credit]**Special Topic in Human Rights**

This course features a detailed study of a special topic in any area of Human Rights. Topics and themes will vary from year to year.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

HUMR 4908 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with an instructor.

Includes: Experiential Learning Activity

Prerequisite(s): normally restricted to students with at least 3.0 credits of Human Rights courses with at least a CGPA of 9.0 or better in Human Rights courses and permission of the Institute.

Humanities (HUMS)

Humanities (HUMS) Courses**HUMS 1000 [1.0 credit]****Myth and Symbol**

Recurring symbols in myth, epic and ritual representing the relation between the sacred and the profane, the origin of the cosmos, the basis of community, and formative human experiences. Primary sources drawn from ancient India and China, Mesopotamia, the Hebrew Bible, and Indigenous cultures.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 1005 [0.5 credit]**Early Human Cultures**

Cultural experiences of small scale societies, including kinship, rituals, magic, social structure, and subsistence. Reading may include the works of classic anthropologists such as Maine, Tylor, Morgan, and Boas.

Precludes additional credit for ANTH 1001 and ANTH 1003.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 1200 [0.5 credit]**Humanities and Classical Civilisation**

The ideas which animated ancient Greek and Roman civilisation and which influenced later western cultural movements through a reading of literary, historical, and philosophical works. Authors include Homer, Herodotus, Thucydides, the Greek Tragedians, Plato, Vergil, and Cicero.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 1500 [0.5 credit]**Introduction to the Humanities: Five Books that Changed the World**

A reading-intensive course on five influential books from Antiquity to the present day. Works may include the Bible, the Bhagavad Gita, Homer's *Odyssey*, Plato's *Republic*, Dante's *Inferno*, Machiavelli's *The Prince*, Shakespeare's *Hamlet*, Mary Shelley's *Frankenstein*, Nietzsche's *Beyond Good and Evil*, Marx's *Communist Manifesto*.

Prerequisite(s): enrolment in a degree program in the Faculty of Arts and Social Sciences, or the Faculty of Public Affairs. Students enrolled in the BHum. program are not eligible to register in this course.

Lecture three hours per week.

HUMS 2000 [1.0 credit]**Reason and Revelation**

The origins of philosophy in ancient Greece and its pursuit in the medieval West, with special attention to knowledge, happiness, and love. Readings include works by Plato, Aristotle, Plotinus, Augustine, Boethius, Aquinas, and Dante.

Prerequisite(s): HUMS 1000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 2101 [0.5 credit]**Art from Antiquity to the Medieval World**

A chronological and thematic survey of the Arts from the earliest times to ca. 1400.

Precludes additional credit for HUMS 4101 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 2102 [0.5 credit]**Modern European Art 1527-2000**

A chronological and thematic survey of the Arts from the sixteenth to the twenty-first century.

Precludes additional credit for HUMS 4101 (no longer offered) and HUMS 3101 (no longer offered).

Prerequisite(s): HUMS 2101 and restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 3000 [1.0 credit]**Culture and Imagination**

Major forms of literary, artistic, and philosophical expression from 1500-1800. Sources drawn from renaissance humanism, reformation theology, enlightenment and romantic philosophy.

Prerequisite(s): HUMS 2000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 3102 [0.5 credit]**Western Music 1000-1850**

Introduction to basic theory, harmony, history and interpretation of Western music including the Medieval, Renaissance, Baroque, Classical and early Romantic periods.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4102 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 3103 [0.5 credit]**Western Music 1850-2000**

Western music from the mid-nineteenth century to the present with emphasis on the seminal contributions of Liszt, Wagner, Mahler, Debussy, Stravinsky, Schönberg and others.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4102 (no longer offered).

Prerequisite(s): HUMS 3102 and restricted to students in the Bachelor of Humanities program.

Lecture three hours a week.

HUMS 3200 [1.0 credit]**European Literature**

Major movements and works from Dante's *Divine Comedy* through Voltaire's *Candide*. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.

Also listed as ENGL 3201.

Prerequisite(s): HUMS 2000 and third-year standing in the Bachelor of Humanities program. English students should have third-year standing with a GPA of B or above.

Lectures three hours a week.

HUMS 3500 [0.5 credit]**Ancient and Medieval Intellectual History**

Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from Archaic Greece to the High Middle Ages.

Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.

Lectures three hours a week.

HUMS 3550 [0.5 credit]**Renaissance and Early Modern Intellectual History**

Examination of some of the major philosophical, religious, political, artistic, and/or literary ideas, works, and movements from the Early Renaissance to 1800.

Prerequisite(s): third-year standing in the Bachelor of Humanities program, or permission of the instructor.

Lectures three hours a week.

HUMS 3800 [0.5 credit]**Humanities in Context**

Designed for students studying humanities, this travel course explores art, literature, politics, philosophy, architecture, religions, and cultures in their historical and contemporary contexts in a particular geographic locale. Travel destinations and themes vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): 2.0 credits in HUMS and permission of the department. Permission of the unit is required to repeat this course.

Hours to be arranged.

HUMS 4000 [1.0 credit]**Politics, Modernity and the Common Good**

Modern and post-modern ways of thinking and doing, including revolutionary new ideas in politics, philosophy, culture, economics, and international relations. Thinkers considered include Arendt, Foucault, Hegel, Heidegger, Hobbes, Kant, Marx, Nietzsche, Polanyi, Rousseau, Said, and Taylor.

Includes: Experiential Learning Activity

Prerequisite(s): HUMS3000 and enrolment in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 4001 [0.5 credit]**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

HUMS 4002 [0.5 credit]**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program and Good Standing in the program.

HUMS 4103 [0.5 credit]**Science in the Modern World**

An introduction to the major scientific ideas of our time (such as Big Bang theory, molecular genetics, evolution, atomic structure), and the impact of technology on society (e.g. global warming, pollution, genetically modified foods, viral infections).

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4100 (no longer offered).

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 4500 [0.5 credit]**Modern Intellectual History**

Examination of some of the major ideas and ideologies from 1800 to the present, including romanticism, liberalism, nationalism, symbolism, socialism, Freudianism, communism, feminism, and postmodernism.

Includes: Experiential Learning Activity

Precludes additional credit for HUMS 4104.

Prerequisite(s): restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 4901 [0.5 credit]**Research Seminar: Antiquity to the Middle Ages**

An interdisciplinary seminar on a selected topic in the humanities from Antiquity to the Middle Ages. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4902 [0.5 credit]**Research Seminar: Renaissance to Enlightenment**

An interdisciplinary seminar on a selected topic in the humanities from the Renaissance to the Enlightenment. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4903 [0.5 credit]**Research Seminar: Romanticism to the Present**

An interdisciplinary seminar on a selected topic in the humanities from Romanticism to the present. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

HUMS 4904 [0.5 credit]**Research Seminar: Non-Western Traditions**

An interdisciplinary seminar on a selected topic in the humanities as expressed in aboriginal and Non-Western cultures. The topic will vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Humanities program.

Seminar three hours a week.

Indigenous Studies (INDG)

Indigenous Studies (INDG) Courses

INDG 1000 [1.0 credit]

Introduction to Indigenous Studies

Survey of historical and contemporary issues relating to Indigenous peoples in Canada. Cultural traditions and the social interactions between Indigenous and non-Indigenous societies are approached from an interdisciplinary perspective. Precludes additional credit for INDG 1010 and INDG 1011. Online only.

INDG 1010 [0.5 credit]

Introduction to Indigenous Peoplehood Studies

This course begins by looking at Creation Stories of different Indigenous peoples and builds to discuss Indigenous worldviews, ways of living, ecological relationships, inter-Indigenous relations and diplomacy among Indigenous peoples. Course materials are rooted in self-situated and collective understandings of Indigenous peoples.

Precludes additional credit for INDG 1000.

Lecture/groups, three hours a week.

INDG 1011 [0.5 credit]

Introduction to Indigenous-Settler Encounters

An interdisciplinary examination of the history of relations between different Indigenous peoples and settler populations from first meetings to the mid-20th century. Topics vary by year, but may include diplomatic relations, trade, spirituality and religion, military alliances, policy, education.

Precludes additional credit for INDG 1000.

Lecture/groups, three hours a week.

INDG 2011 [0.5 credit]

Contemporary Indigenous Studies

Indigenous and non-Indigenous perspectives on issues since the 1960s. Topics include: contemporary explorations of treaty relationship and governance, cultural appropriation, identity politics, urban Aboriginality and contemporary social and cultural issues.

Precludes additional credit for CDNS 2100 and CDNS 2011.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lectures/groups three hours a week.

INDG 2012 [0.5 credit]

Anishinaabe Studies

In-depth look at the Anishinaabe peoples. Topics may include: Anishinaabe creation stories, migration, the clan system, worldviews; oral, written, and recorded history; treaties, contemporary events, ecological knowing, cultural production, relations with settler-colonies and other nations, self-governance, diplomatic relations.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups three hours a week.

INDG 2013 [0.5 credit]

Haudenosaunee Studies

Focuses on the Haudenosaunee from the founding of the Confederacy to present. Discussion of the culture, language, and structure of Haudenosaunee society, the Kaienerekowa (Great Law of Peace) and the Code of Handsome Lake, symbolism, and contemporary issues, including the impact of Euro-Canadian government policies.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2015 [0.5 credit]

Indigenous Ecological Ways of Knowing

Indigenous peoples' relationships with the non-human world in both historical and contemporary contexts. Topics may include: the origins of Indigenous ecological ways of knowing, Indigenous languages, collective stewardship, water, land, and challenges to maintaining traditional knowledge.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2020 [0.5 credit]

Decolonizing Gender, Sex, and Sexuality

Effects of colonization in unbalancing Indigenous peoples' lives through the imposition of constructions of gender, sex, and sexuality, and the ways that Indigenous peoples are working to restore balance to their families and communities. Topics vary by year.

Prerequisite(s): second-year standing or permission of the School of Indigenous and Canadian Studies.

Lecture/groups, three hours a week.

INDG 2709 [0.5 credit]

Indigenous Drama

A study of dramatic literatures and theatre practice from Indigenous theatre makers, including playwrights, directors and other practitioners.

Also listed as ENGL 2709.

Prerequisite(s): second-year standing or permission of the School.

Lecture three hours per week

INDG 3001 [0.5 credit]

Indigenous Governance

An examination and discussion of different Indigenous forms of governance. Topics will vary by year and may include: Indigenous ways of knowing and forms of governance, community leadership, diplomatic relations, and struggles for self-determination.

Precludes additional credit for INDG 3000 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3011 [0.5 credit]**Indigenous Rights, Resistance, and Resurgence**

Indigenous approaches to restoring balance within their nations. Topics include: direct action; political organizing; land claims; rights, courts, and legal action; everyday acts of resistance and resurgence such as petitioning, social media, arts-based movements, and community initiatives.

Includes: Experiential Learning Activity

Precludes additional credit for INDG 3010 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3015 [0.5 credit]**Indigenous Ecological Ways of Knowing and the Academy**

The relationship between Indigenous traditional ecological knowledges and the academy. Topics include: linguistic barriers, tensions in diffuse ways of knowing, research ethics with respect to Indigenous traditional knowledge, and working with knowledge holders.

Prerequisite(s): third-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 3901 [0.5 credit]**Selected Topics in Indigenous Studies**

Topics vary from year to year.

Prerequisite(s): third- or fourth-year standing, or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4001 [0.5 credit]**Indigeneity in the City**

This course begins with an examination of the relationship between Indigenous peoples and the construction of cities and urban space. Culminates in the undertaking of research projects that directly link students to the urban Indigenous community in Ottawa.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4011 [0.5 credit]**Indigenous Representations**

Through an examination of instances of Indigenous misrepresentation, students will explore how Indigenous peoples have used cultural production in various forms (such as literature, film, television, visual arts, music, performance) to put forth their own visions of their peoples, worldviews, and lives.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours a week.

INDG 4015 [0.5 credit]**Land as a Relation**

This is an intensive 14-day field course that brings students together with knowledge holders on the land. The connections between Indigenous ways of knowing, the land, Indigenous languages, and the land's non-human inhabitants, will be explored. Locations and course fee varies by year.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Fourteen-day field course.

INDG 4020 [0.5 credit]**Practicum**

Students will learn to apply their knowledge of topics in Indigenous Studies with a local organization whose mandate involves working with and/or for Indigenous peoples. To be arranged in consultation with the Program Coordinator.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

INDG 4901 [0.5 credit]**Selected Topics in Indigenous Studies**

Topics vary from year to year.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Seminar three hours per week.

INDG 4905 [0.5 credit]**Directed Studies I**

An optional course normally restricted to fourth-year Honours students in Canadian Studies or Indigenous Studies and to Qualifying-year Graduate students.

Includes supervised reading and written work in an Indigenous Studies area.

Prerequisite(s): fourth-year standing or permission of the School of Indigenous and Canadian Studies.

Industrial Design (IDES)

Industrial Design (IDES) Courses**IDES 1000 [0.5 credit]****Theory and History of Design**

The theoretical and historical background of industrial design and design; disciplinary foundations and interdisciplinary connections; methodological aspects and economic and social contexts; contemporary scenarios in design; technological innovation and manufacturing processes.

Also listed as ARCH 2006.

Lectures three hours a week.

IDES 1001 [0.5 credit]**Industrial Design Analysis**

Principles of comparative product design analysis covering marketing and sales, manufacturing techniques and materials, ambiance and qualities of the object/context relationship, and design analysis from the perspective of the designer, the end-user and the environment.

Includes: Experiential Learning Activity

Also listed as ARCH 2101.

Prerequisite(s): IDES 1000 or ARCH 2006.

Lectures three hours a week.

IDES 1300 [0.5 credit]**Projects IA**

An introduction to the skills and processes of industrial design including drawing and sketching as an aid to design, basics of line, shape, ideation, and visualization, product drawing, presentation techniques, basic model making, studio equipment and practices, introduction to the design process.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1000 (may be taken concurrently).

Studio and lectures six hours a week.

IDES 1301 [0.5 credit]**Projects IB**

Aspects of industrial design theory and practice, specifically those dealing with principles of product development, fundamentals of form and colour and case studies. Students will explore the design process with emphasis on creative problem-solving techniques and visual communication in design.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1300.

Studio and lectures six hours a week.

IDES 2101 [0.5 credit]**Design for Manufacturing A**

Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. Influences and role of assembly, finishing, production tooling, and costing.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1001, IDES 1301.

Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2102 [0.5 credit]**Design for Manufacturing B**

Continuation of IDES 2101. Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. The influences and role of assembly, finishing, production tooling, costing are addressed.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2101 or permission of the School of Industrial Design.

Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2104 [0.5 credit]**Computer Applications A**

Provides industrial design students with working knowledge of design related 2D computer applications, such as graphic manipulation, illustration software, and 2D Computer-Aided Design (CAD). Labs and projects are oriented towards building a foundation in software and group work skills for studio courses.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301.

Lecture and tutorials three hours a week.

IDES 2105 [0.5 credit]**Computer Applications B**

Provides industrial design students with working knowledge of design related 3D computer applications, such as surface and solids modelling CAD software. Labs and projects are oriented towards building a foundation in software and group work skills for studio courses.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301.

Lecture and tutorials three hours a week.

IDES 2205 [0.5 credit]**Sensory Aspects of Design for User Experience**

An exploration of multi-sensory qualities derived from and designed into products to optimize product-interaction experiences. Visual, tactile, auditory, and other related sensory aspects of design and design principles that contribute to the product multi-sensory characteristics while adding meaning and emotional value.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 2203 (no longer offered).

Prerequisite(s): IDES 1001 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 2300 [0.5 credit]**Projects IIA**

Principles of design sketching used in the industrial design process. Topics include: sketching as a tool for problem definition; idea exploration and form development; rendering techniques and the communication of design concepts; basic physical prototyping and modeling-making techniques.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1001 and IDES 1301, or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 2302 [0.5 credit]**Projects IIB**

Introduction to the design principles associated with adapting products to an existing product semantic. Topics covered: principles of design, product semantics, design analysis, design synthesis, design evaluation, and modeling techniques. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2300 or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 2600 [0.5 credit]**Human Factors/Ergonomics in Design**

Foundation course in human factors/ergonomics providing an overview of physical and cognitive considerations in product design and related design fields. Anthropometrics, biomechanical considerations, cognition, social interaction, and emotional interaction are introduced in relation to supporting user experience, health and safety, performance and productivity.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures and discussion three hours a week.

IDES 3104 [0.5 credit]**Exhibition Design**

Exhibition design is explored through lectures, case studies, field trips and guest lectures. Students participate in exercises and apply design skills to a variety of exhibition design realms. Introduces students to the potential of the built environment for exploring a range of diverse exhibit applications.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 3105 [0.5 credit]**Visual Communication and Package Design**

A survey of visual communication and package design principles relevant to industrial designers. Product/brand definition and corporate identity through package design.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 3106 [0.5 credit]**Advanced Computer Applications**

Examination of complex product geometry utilizing 3D computer applications. Topics include spline, surface and solids construction, surface verification tools, and rendering tools and techniques. Workflow, robust design, reverse design techniques and 3D printing will be explored through exercises.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2105.

Lecture and tutorials three hours a week.

IDES 3107 [0.5 credit]**Design and Sustainability**

Explores the industrial designer's role in creating more environmentally and socially responsible products. Addresses imperatives and drivers for integrating sustainability into products. Includes: sustainable design strategies, strategies and tools, sustainable design business case, circular economy model for designed products, and case studies.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 1301 or permission of the School of Industrial Design.

Lectures and tutorials three hours a week.

IDES 3202 [0.5 credit]**Advanced Studies in Form and Colour**

Students may continue the research and study encountered in IDES 2205, IDES 2300 and IDES 2302 by doing advanced research in the phenomena of form and/or colour and their communicative functions in products. Directed Study.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Lecture and tutorials three hours a week.

IDES 3302 [0.5 credit]**Projects IIIB**

Introduction to the principles of innovation as found in industrial design. Invention, innovation, entrepreneurship, basic mechanisms. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 3301 (no longer offered).

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 3305 [0.5 credit]**Special Studies**

Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 3306 [0.5 credit]**Special Studies**

Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves.

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 3310 [0.5 credit]**Projects IIIA**

Introduction to the design principles associated with the evaluation and re-design of an existing product. Topics include: user/machine relationship, component packaging, and manufacturability. The design project(s) explore some or all of the design principles covered in the lectures.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 3300 (no longer offered).

Prerequisite(s): IDES 2302 or permission of the School of Industrial Design.

Studio and lectures twelve hours a week.

IDES 3502 [0.5 credit]**Contextual Nature of Products**

Cultural subjects which have an influence on contemporary industrial design. The perspective of the course is anthropological: the context and cultural relevance of industrial design.

Prerequisite(s): IDES 1000 (ARCH 2006).

Lectures and tutorials three hours a week.

IDES 3601 [0.5 credit]**Research for Design**

Basic design research techniques to foster design exploration. Methods focus on understanding context and user experience to produce meaningful, actionable insights and design opportunities. Processes include qualitative and quantitative research, as well as creative and evaluative research with people. Teamwork and collaboration are explored.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2600.

Lectures or laboratory three hours a week.

IDES 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

IDES 4001 [0.5 credit]**Industrial Design Seminar**

Topics vary yearly and address key contemporary industrial design issues. There is a focus on writing, discussion, and debate. Students organize a seminar with design professionals and other community experts including student and professional presentations, interaction, and discussion.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Seminar three hours a week.

IDES 4002 [0.5 credit]**Professional Practice**

The organizational aspects of consultancies and client responsibilities within the framework of corporate management. Topics include: the form of contracts for consultancy, determination of fees, legal implications, patents and copyrights. Guest lecturers.

Precludes additional credit for IDES 3503 (no longer offered).

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Lectures and discussion three hours a week.

IDES 4101 [0.5 credit]**Adv. Studies in Manufacturing**

Advanced manufacturing concepts and workflows are examined through a series of workshops and minor projects utilizing state-of-the-art equipment.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2101 and IDES 2102.

Lectures or laboratory three hours a week.

IDES 4200 [0.5 credit]**Form Organization**

Using form organization as a tool to design, the definition and prescription of monolithic solids by means of an abstract system; making and verifying materialized approximations of such solids.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 2300 and IDES 2302 or permission of the School of Industrial Design.

Lectures, tutorials and laboratory six hours a week.

IDES 4301 [0.5 credit]**Minor Projects**

Advanced skills-based course that enhances student experience in novel, experimental processes and techniques in design. Workshop-style activities and short projects focus on increasing skill competence and versatility in a variety of fields. Emphasis on time management and the ability to work independently.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Studio and lectures six hours a week.

IDES 4305 [0.5 credit]**Special Studies**

Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 4306 [0.5 credit]**Special Studies**

Like the third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Lectures, tutorials, laboratory and studio three hours a week or equivalent.

IDES 4310 [1.5 credit]**Capstone Project**

Application of design principles in a comprehensive design project. Problem area should be product-oriented and of sufficient complexity. Normally undertaken in consultation with off-campus organizations and/or industry. Supervised by faculty and/or sessional members.

Includes: Experiential Learning Activity

Precludes additional credit for IDES 4300 (no longer offered).

Prerequisite(s): IDES 3302 or permission of the School of Industrial Design.

Studio and lectures six hours a week in Fall and twelve hours a week in Winter.

IDES 4400 [0.5 credit]**Internship Field Report**

Work experience related to industrial design. Following the internship period, normally 12 weeks, a comprehensive report describing observations and insights will be submitted. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): IDES 3300 or IDES 3310 or permission of the School of Industrial Design.

Tutorial hours arranged.

Information Resource Management (IRM)

Information Resource Management (IRM) Courses

IRM 1002 [0.5 credit]**Reference and Information Services**

Introduction to the theory and techniques needed to conduct reference interviews and interpret reference queries. Students learn to select and use general reference sources such as dictionaries, encyclopedias, directories, bibliographies, periodical indexes, almanacs, and handbooks in print, and electronic formats.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1003 [0.5 credit]**Collections management**

Introduction to the principals of collections management including techniques and procedures for selecting, ordering and receiving library materials, accounting, collection development and automated acquisitions. Students also learn policies and procedures required for circulation, document delivery and interlibrary loans.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1004 [0.5 credit]**Reader's Advisory Services**

Students become familiar with fiction and non-fiction materials available to various categories of clients and learn how to market them. In addition, students further develop through various assignments their researching, writing, speaking, listening and communication skills.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 1005 [0.5 credit]**Web Interface Development**

Combining graphics, text, audio and video to develop websites on an individual basis and in groups, using latest versions of HyperText Markup Language(HTML), Cascading Style Sheets (CSS), JavaScript and data interchange formats such as Extensible Markup Language(XML) and JavaScript Object Notation(JSON).

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

IRM 1006 [0.5 credit]**Subject Analysis and Indexing**

Students learn the basic theory of subject analysis and indexing methods used to provide access to library materials and literature. Practical instruction makes use of thesauri, as well as standard subject heading lists, such as Sears and Library of Congress.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hour a week.

IRM 1007 [0.5 credit]**Cataloguing**

The catalogue is the main finding aid to the collection of the library. Students learn the basic principles and concepts of international standards used to describe library materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 1001 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 1008 [0.5 credit]**Introduction to Information Resource Management**

Students develop understanding of the concepts of information retrieval, creation, evaluation, organization and client service. Knowledge of legal and ethical implications of information and current trends in the field is studied.

Through in-class lectures and hands-on activities, students gain an overview of the field.

Precludes additional credit for IRM 1000 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 2002 [0.5 credit]**Legal and Business Information**

Students develop skills in planning and executing information searches and evaluating print and electronic resources. Students learn to locate information on selected topics, compile subject-specific annotated bibliographies and instruct library clients in the use of specialized materials and databases.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 1002.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 2003 [0.5 credit]**Classification**

How to interpret and apply Dewey Decimal and Library of Congress Classification systems. Also includes analysis of the subject content of materials, building notation, using tables, shelf-listing techniques and creating unique book numbers.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 1006.

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2004 [0.5 credit]**Information Management and Digital Preservation**

Essentials of information management in an organization including the life cycle management of files in paper and the electronic environment. This course will also cover contemporary issues in information management and digital preservation.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 1008.

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 2005 [0.5 credit]**Advanced Cataloguing**

Libraries purchase and provide access to a wide variety of print and electronic resources. Building on work done in IRM 1007, students learn to interpret international cataloguing standards to describe more complex materials. In-class exercises, lectures and practical experience help students apply these cataloguing standards.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 2001.

Prerequisite(s): IRM 1007.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3001 [0.5 credit]**Scientific and Medical Information**

Students enhance their knowledge of print and electronic reference sources in science and technology. Students learn to compile specialized subject-specific bibliographies and assignments provide training in the use of science and technology reference sources.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 2002.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3003 [0.5 credit]**Legal Issues in Information Resource Management**

In-depth analysis and assessment of copyright and other forms of intellectual property. Legal issues related to information technology. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, Charter and human rights issues, and security.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 3004 [0.5 credit]**Project management**

Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of information management using case studies.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in the Information resource management program.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 3006 [0.5 credit]**Data Analysis and Research Methodology**

Introduction to the logic and design of research. Qualitative and quantitative research methodology with emphasis on the application and interpretation of statistical techniques for data analysis. May include, but are not limited to, bivariate and multivariate analysis, distribution analysis, visual data analysis, market basket analysis.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 3002 (no longer offered).

Prerequisite(s): BIT 2009 or equivalent.

Lectures three hours a week.

IRM 3007 [0.5 credit]**Practicum for IRM**

Students will design and complete a project related to information management under the supervision of a faculty member or librarian. This course provides the opportunity to apply knowledge gained in previous courses.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Information resource management program.

Tutorial/laboratory eight hours a week.

IRM 3008 [0.5 credit]**Metadata for IRM**

Students develop an understanding of key metadata schema and apply standards to describe range of digital resources. The metadata schemes include focus on Dublin Core (DC) and MODS with select coverage of specialist schema. Through in-class lectures and hands-on activities, students apply metadata schemes.

Includes: Experiential Learning Activity

Precludes additional credit for IRM 3000 (no longer offered).

Prerequisite(s): IRM 2005.

Lectures two hours a week, tutorial/laboratory two hours a week.

IRM 4000 [0.5 credit]**Library Software**

Using skills and knowledge of automated systems already developed in introductory courses, students learn the theory and receive the hands-on practice needed to use library databases. A component on choosing and comparing library software is included.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 4001 [0.5 credit]**Archives and Special Collections**

Principles and methods used by archivists and record managers in organizing their collections for better access and retrieval. Students also learn aspects of physical bibliography, the book trade, preservation and conservation of books and how to exhibit such material.

Includes: Experiential Learning Activity

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

IRM 4002 [0.5 credit]**Network Technology**

Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.

Includes: Experiential Learning Activity

Lectures two hours a week, tutorial/laboratory one hour a week.

IRM 4004 [0.5 credit]**Applied Big Data**

Introduction to Big Data and Artificial Intelligence. Topics include: Association Rule Mining, Classification, Clustering, Linear and Logistic Regression, Hadoop Distributed File System, Spark, Batch and Stream Data Processing, and other related. Applications on other domains such as multimedia, networks, finance, and/or business.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 3006.

Lectures three hours a week.

IRM 4900 [1.0 credit]**IRM Capstone Project**

Student-initiated project developed in association with a project supervisor and external information resource management advisor. Project is supported by a written report, seminar discussions and final presentation. All proposals must be approved by the IRM Program Project Committee.

Includes: Experiential Learning Activity

Prerequisite(s): IRM 3004, IRM 3007 or LIB 2030 and LIB 2047 and fourth year standing in the IRM program.

Tutorial hours arranged.

Information Technology (BIT)

Information Technology (BIT) Courses

BIT 1000 [0.5 credit]

Mathematics I for NET

Tailored for students in the Network Technology program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1100, BIT 1200, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1001 [0.5 credit]

Mathematics II for NET

Tailored for students in the Network Technology program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1101, BIT 1201, ECON 1401, ECON 1402, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401, MATH 1402.

Prerequisite(s): BIT 1000.

Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1002 [0.5 credit]

Physics for Information Technology I

An introductory course on energy, thermodynamics, sound and electromagnetic waves, optics, and modern physics. Practical skills are learned in the laboratory, which is a required part of the course.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1203, PHYS 1001, PHYS 1003, PHYS 1007.

Prerequisite(s): BIT 1100.

Lectures three hours a week, tutorial three hours/laboratory three hours alternate weeks.

BIT 1006 [0.5 credit]

Achieving Success in Changing Environments

Students explore the possibilities ahead, assess their own aptitudes and strengths, and apply critical thinking and decision-making tools to help resolve some of the important issues in our complex society with its competing interests.

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week.

BIT 1007 [0.5 credit]

Physics for NET

An introductory course on energy, electrical networks (AC and DC circuits, resistance, impedance, capacitance), electrostatics (electric fields, static electricity), electromagnetism, electromagnetic waves, optics, and other topics in modern physics. Practical skills are learned in the laboratory, which is a required part of the course.

Precludes additional credit for BIT 1003 (no longer offered), BIT 1204, PHYS 1002, PHYS 1004, PHYS 1008. Prerequisite(s): BIT 1000, Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial three hours/laboratory three hours alternate weeks

BIT 1100 [0.5 credit]

Mathematics I for IMD

Tailored for students in the Interactive Multimedia Design program, this course covers basic concepts in functions (polynomials, exponential, logarithmic) and introduces concepts of limits, derivatives and rules of differentiation, applications of differentiation (max-min problems, curve sketching) and integration.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1000, BIT 1200, ECON 1401, ECON 1402, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401, MATH 1402.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1101 [0.5 credit]

Mathematics II for IMD

Tailored for students in the Interactive MultiMedia Design program, this course covers systems of linear equations, vector space of n-tuples, subspaces and bases, matrix transformations, kernel, range, matrix algebra and determinants, inner products and orthogonality, eigenvalues, diagonalization and applications.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1001, BIT 1201, ECON 1401, ECON 1402, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401, MATH 1402.

Prerequisite(s): BIT 1100.

Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1200 [0.5 credit]**Calculus**

Limits. Differentiation of the elementary functions, including trigonometric functions. Rules of differentiation. Applications of differentiation: max-min problems, curve sketching, approximations. Introduction to integration: definite and indefinite integrals, areas under curves, fundamental theorem of calculus.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1000, BIT 1100, MATH 1002, MATH 1004, MATH 1007, MATH 1009, MATH 1052, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions; or MATH 0005 and MATH 0006; or equivalent.

Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 1201 [0.5 credit]**Linear Algebra**

Systems of linear equations; vector space of n-tuples, subspaces and bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product.

Complex numbers (including de Moivre's Theorem, and n-th roots). Eigenvalues, diagonalization and applications.

Note: MATH 1119 is not an acceptable substitute for BIT 1201.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1001, BIT 1101, MATH 1102, MATH 1104, MATH 1107, MATH 1119, MATH 1152, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial and laboratory one hour a week.

BIT 1203 [0.5 credit]**Newtonian Physics**

Mechanics, properties of matter, thermodynamics.

Applications chosen in part from the life sciences.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, PHYS 1001, PHYS 1003, PHYS 1007.

Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent; or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 or BIT 1200 (may be taken concurrently); or (iii) permission of the Department. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1204 [0.5 credit]**Electromagnetism & Modern Physics**

Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics.

Applications chosen in part from the life sciences.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, PHYS 1002, PHYS 1004, PHYS 1008.

Prerequisite(s): BIT 1203 or PHYS 1001 or PHYS 1003 or PHYS 1007 or permission of the Department. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, laboratory or tutorial three hours a week.

BIT 1400 [0.5 credit]**Introduction to Programming and Problem Solving**

Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 1005, COMP 1405, ITEC 1400, ITEC 1401.

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory three hours a week.

BIT 2000 [0.5 credit]**Introduction to Statistics**

This course covers data analysis, introduction to probability theory, some standard discrete and continuous distributions and their application to interval estimation and significance testing, computational aspects of statistics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): restricted to students in the BIT degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2001 [0.5 credit]**Introduction to Business**

An overview of the most fundamental business functions.

The management of people, human resources, marketing, accounting and finances, business law and operations.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures: three hours a week.

BIT 2002 [0.5 credit]**Marketing in the IT sector**

Basic problems and practices in marketing. Marketing strategies, planning, packaging, branding and promotion at the level of the individual firm; distribution channels.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2204.

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week.

BIT 2006 [0.5 credit]**Elective**

Students must choose from among a list of approved Electives at Algonquin College.

Precludes additional credit for BIT 3003 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, or as arranged.

BIT 2008 [0.5 credit]**Multimedia Data Management**

Concepts and fundamentals of database systems.

Design of relational databases, normalisation, referential integrity, structured query language (SQL), server-side scripting, organisation of multimedia content, dynamic page loading, storage and compression of media, media network considerations, digital watermarking and rights management.

Includes: Experiential Learning Activity

Precludes additional credit for ITEC 2000, IMD 2000 (no longer offered), IRM 2000 (no longer offered).

Prerequisite(s): BIT 1400 and IMD 1005 or IRM 1005.

Lecture three hours a week, tutorial/laboratory two hours a week.

BIT 2009 [0.5 credit]**Statistics for Technology**

This course covers statistical data analysis with an emphasis on hypothesis testing including parametric tests (e.g., t-tests, ANOVA) and non-parametric tests (e.g., Kruskal-Wallis, Friedman, chi-square), correlation and linear regression. Provides an introduction to probability theory and distributions (e.g. binomial, normal).

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2000, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606, and STAT 3502.

Prerequisite(s): Restricted to students in the BIT degree program.

Lectures three hours a week, tutorial/laboratory one hour a week.

BIT 2010 [0.5 credit]**Differential Equations & Multivariate Calculus**

Curves and surfaces. Polar, cylindrical and spherical coordinates. Partial derivatives, gradients, extrema and Lagrange multipliers. Exact differentials. Multiple integrals over rectangular and general regions. Integrals over surfaces. Line integrals. Vector differential operators. Green's Theorem, Stokes' theorem, Divergence Theorem. Applications.

Prerequisite(s): BIT 1200.

Lectures three hours a week, tutorial one hour a week.

BIT 2400 [0.5 credit]**Intermediate Programming**

Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 1006, COMP 1406, ITEC 2400, ITEC 2401.

Prerequisite(s): BIT 1400. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory three hours a week.

BIT 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

BIT 4000 [0.5 credit]**Directed Studies**

Independent study under the supervision of a member of the School of Information Technology, open only to students in the B.I.T. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to one such course in their program.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the School of Information Technology.

BIT 4001 [0.5 credit]**Selected Topics in Information Technology**

Topics not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.

Prerequisite(s): third-year standing in the BIT Program or permission of the department.

Lecture three hours a week.

Interactive Multimedia and Design (IMD)

Interactive Multimedia and Design (IMD) Courses

IMD 1000 [0.5 credit]

Introduction to Interactive Multimedia Design

Introduction to interactive multimedia and design, focused on the production and processes of animation, visual fx, game design and development, web design and development, and user experience/interfaces.

Topics include: mark-up languages, design process/problem-solving tools, human-centered design, product development, ethics, and copyright and intellectual property.

Includes: Experiential Learning Activity

Precludes additional credit for ITEC 1100.

Prerequisite(s): Restricted to students in the B.I.T. degree program.

Lecture three hours a week.

IMD 1001 [0.5 credit]

Visual Communication

Visual communication techniques commonly used to draft concepts and ideas to support scripts for film, animation, HCI, and/or game development. Topics include: storyboarding, composition, vanishing point, line quality, visual timing, perspective, depth of field, body language and life drawing. A digital drawing tablet is required.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 1000 and IMD 1002.

Workshop three hours a week.

IMD 1002 [0.5 credit]

Visual Dynamics

Fundamentals of composition with emphasis on realistic rendering. Students learn how to execute thumbnails and design comprehensives. Topics include illustration, type, colour, texture, proximity and unity, alignment, repetition and continuity, contrast, size relationships, balance, rhythm, negative space, cropping and view selection.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop three hours a week.

IMD 1004 [0.5 credit]

Design Processes

Design fundamentals using industry standard software techniques and workflow are explored. Topics include: gestalt principles, grids systems, colour, texture, raster and vector image production, and typography. Students design for publication to output such as Web, print, and electronic book formats. Required digital drawing tablet.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Workshop three hours a week.

IMD 1005 [0.5 credit]

Web Development

Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid xHTML, cascading style sheets (CSS), JavaScript and XML structures.

Includes: Experiential Learning Activity

Precludes additional credit for ITEC 1005.

Prerequisite(s): IMD 1000 and IMD 1004.

Workshop five hours a week.

IMD 2003 [0.5 credit]

Audio and Video

The creation, production and editing of audio and video for multimedia applications. Topics include single camera recording and capture techniques through to post-production editing. Emphasis is placed on production and operation skills while adhering to industry standard costs and deadlines.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 1000 and IMD 1002.

Workshop four hours a week.

IMD 2006 [0.5 credit]

Introduction to Game Design and Development

Basic concepts in the design and development of computer games, including: fundamentals of production cycle, genres, gameplay and game mechanics, story and character development, level design, artificial intelligence for games, game user interface, and common development tools.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400 and second-year standing in the IMD program.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 2007 [0.5 credit]

Intro to 3D Animation

Introduction to the basics of 3D computer animation.

Topics include: introduction of 3D animation packages, 12 Principles of Animation, character design, character animation (walking/locomotion, motion, and poses), soft-body animation (shape interpolation and facial animation), and acting for animators.

Includes: Experiential Learning Activity

Precludes additional credit for IMD 2005 (no longer offered).

Prerequisite(s): BIT 1002 and second-year standing in the IMD program.

Lecture/workshop three hours a week.

IMD 2900 [1.0 credit]**Design Studio 1**

Advanced practical studio-based sessions focused on project management. Topics include: project management styles, team collaboration techniques, prototyping, project and content management, marketing, and testing/validation. The studio emphasizes the management of web design and development projects.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the IMD program. Studio/lecture eight hours a week.

IMD 3002 [0.5 credit]**3D Computer Graphics**

Technical aspects of 3D computer graphics.

Homogeneous transformations, viewing pipeline, cinematography, modeling techniques (explicit and implicit), scene composition, level of detail methods, advanced lighting techniques (BRDF, IBL, subsurface-scattering), 2D/3D texturing, local/global illumination, rendering methods, and shaders.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 1101, BIT 2400 and IMD 3900.

Lectures three hours a week, tutorial/laboratory two hours per week.

IMD 3004 [0.5 credit]**Human Computer Interaction and Design**

Introduction to concepts centered on Human-Computer Interaction from hardware and software perspectives.

Topics include design principles, usability principles and engineering, solving user-centred problems, device interaction, and graphical user interface design (2D and 3D interfaces).

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2009 and third-year standing in the IMD program.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3005 [0.5 credit]**Sensor-Based Interaction**

Development of interactive applications that connect the physical and virtual space. Topics include using external devices and sensor hardware, sensing objects and people, gestural input, computer vision, processing of live audio input, and networked software and devices.

Includes: Experiential Learning Activity

Precludes additional credit for IMD 2001 (no longer offered).

Prerequisite(s): BIT 2400.

Lecture/ workshop four hours a week.

IMD 3006 [0.5 credit]**Software Design for Multimedia Applications**

Provides students with knowledge and expertise to design and develop complex software systems and programs for common multimedia applications. Topics include: data structures, system and requirement analysis, component identification, common design patterns, and working with reusable components.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 3900 [1.0 credit]**Design Studio 2**

Intermediate practical studio sessions covering the creative aspects of 3D graphics and animation. Topics include: environment and character modeling, texturing, using bump/displacement maps, advanced materials, 3D cameras, various lighting, keyframe animation, and rendering methods.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2007 and third-year standing in the IMD program.

Studio/lecture eight hours a week.

IMD 3901 [1.0 credit]**Design Studio 3**

Studio-based course focuses on interdisciplinary group work, and the use of reality-based/ natural-based interfaces for multiuser interaction, understanding social and environmental context in physical design, basic networking, advanced sound design, and haptic feedback.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the IMD program, IMD 2900 and IMD 3005.

Studio/lecture eight hours a week.

IMD 4002 [0.5 credit]**Technology and Culture**

An examination of the relationship between communication technology and society. The course examines the factors that contribute to changes in the collection, storage and distribution of information and the cultural implications of these changes.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the IMD program.

Seminar three hours a week.

IMD 4005 [0.5 credit]**Advanced Topics in Multimedia**

Advanced topics in multimedia industry not ordinarily treated in the regular course program due to their contemporary subject matter. The choice of topics varies from year to year.

Includes: Experiential Learning Activity

Precludes additional credit for IMD 4004 (no longer offered).

Prerequisite(s): fourth-year standing in the IMD program.

Lecture three hours a week.

IMD 4006 [0.5 credit]**Advanced Game Design and Development**

Provides students with knowledge and expertise to design and develop professional computer games with advanced and novel features. Topics include: target audience and inclusive/accessible design, interaction design and emerging technologies, artificial intelligence, interactive stories, procedural content generation, serious games and gamification.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2006 and IMD 3002.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4008 [0.5 credit]**Mobile User Interface Design and Development**

Design, development, and evaluation of user interfaces for mobile applications. Topics include: user-centered design methods and develop mobile applications employing the various input and output capabilities available on mobiles, e.g., multi-touch, device motion/rotation, video/audio capture, vibration.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3004 and IMD 3006.

Lecture three hours a week, tutorial/laboratory two hours a week.

IMD 4901 [1.5 credit]**IMD Capstone Project**

Student-initiated digital media project, under the supervision of a project advisor, consisting of complete end-to-end production, from design to final product. Development will be assessed via design documents, project plans, progress presentations, culminating in a final exposition in front of a panel of industry experts.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2900, IMD 3004, IMD 3900, IMD 3901 and fourth-year standing in the IMD program.

Tutorial hours arranged.

Network Technology (NET)

Network Technology (NET) Courses**NET 1001 [0.5 credit]****Computer Technology Basics**

Construction and function of PCs. Introduces technical concepts and terminology relating to system boards, system busses, input/output devices, memory, microprocessors and peripherals. Interaction of software and hardware; data storage; performance issues.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

NET 1002 [0.5 credit]**Networking Fundamentals**

Foundation knowledge for computer networks and communications. Topics include basic network design, layered communications models, IP addressing and subnets, and industry standards for networking media and protocols, with an emphasis on TCP/IP protocol suite and Ethernet environments.

Includes: Experiential Learning Activity

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 1006 [0.5 credit]**Routing and Switching**

Introduction to routing and switching concepts including, static and dynamic routing, trunking and VLANs. Topics include configuring routers and switches and resolving common configuration and reachability issues.

Includes: Experiential Learning Activity

Precludes additional credit for NET 1005 (no longer offered).

Prerequisite(s): NET 1002.

Lecture three hours a week, tutorial/laboratory three hours a week.

NET 2000 [0.5 credit]**Intermediate Networking**

Architecture, components and operations of routers and switches in Enterprise networks. Topics include configuration and troubleshooting of OSPF, including Multi-area, redundancy, NAT and troubleshooting techniques.

Includes: Experiential Learning Activity

Prerequisite(s): NET 1006.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 2007 [0.5 credit]**Basics of Transmission Systems**

Introduction to the fundamentals of information transmissions systems used in physical layer of the Internet. Covers time- and frequency-domain concepts, digital and analog transmission, signal encoding, sampling, modulation, demodulation, error detection and correction. Examples: DSL, Cable modem, and wireless LAN. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 1001 and BIT 1007.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 2008 [0.5 credit]**DevOps**

Exposure to unifying software development (Dev) and software operation (Ops). Use of Python to monitor and automate network management tasks.

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 2010 [0.5 credit]**Desktop and Server Environments I**

Using Linux and Windows Server, study of the basic features such as file system, system utilities, memory management, boot process troubleshooting and UI customizations. Client-Server architecture is examined with a focus on basic Server configuration and administration. Includes: Experiential Learning Activity. Includes: Experiential Learning Activity. Precludes additional credit for NET 2002 (no longer offered). Prerequisite(s): NET 1001. Lecture two hours a week, tutorial/laboratory two hours a week.

NET 2011 [0.5 credit]**Desktop and Server Environments II**

Using Unix and Linux Operating systems, study of the command line and network Server operating environments. Configuring Services and Protocols such as DNS, NTP, SSH, SMB, SMTP, POP3, IMAP, HTTP, and DHCP. Basic Server security using firewalls is also introduced. Includes: Experiential Learning Activity. Includes: Experiential Learning Activity. Precludes additional credit for NET 2003 (no longer offered). Prerequisite(s): NET 2010. Lecture two hours a week, tutorial/laboratory two hours a week.

NET 2012 [0.5 credit]**Networking Technologies and Automation**

Enterprise technologies and QoS mechanisms used for networks access. Topics include virtualization, and automation concepts. Software-defined networking, controller-based architectures and how application programming interfaces (APIs) enable network automation. Includes: Experiential Learning Activity. Precludes additional credit for NET 2001 (no longer offered). Prerequisite(s): NET 2000. Lectures three hours a week, tutorial/laboratory two hours a week.

NET 2013 [0.5 credit]**Computer Systems Foundations**

Introduction to the design and implementation of digital circuits and microprocessors. Topics include: binary numbers and arithmetic, fundamentals of boolean algebra, combinational circuits, sequential circuits, computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts, computer arithmetic, CPU assembly instruction sets. Includes: Experiential Learning Activity. Precludes additional credit for NET 1004 (no longer offered), PLT 1007 (no longer offered), NET 2009 (no longer offered), PLT 2009 (no longer offered), OSS 2009. Prerequisite(s): BIT 2400. Lectures three hours a week, tutorial/laboratory one hour a week.

NET 3000 [0.5 credit]**Database Concepts and SQL**

Concepts and fundamentals of relational database systems. Students learn how to design relational databases starting from a conceptual data model, following accepted logical and physical design principles. Topics include normalisation, referential integrity, SQL, DDL and SQL DML & ODBC and data extraction/filtering techniques. Includes: Experiential Learning Activity. Prerequisite(s): second-year standing in the Networking program. Lecture two hours a week, tutorial/laboratory two hours a week.

NET 3001 [0.5 credit]**Real-time Systems**

Principles of event-driven systems, review of computer organization; parallel and serial interfaces; programmable timer; I/O methods; polling and interrupts. Real-time kernels. Critical design consideration: concurrency, dead lock, synchronization. Maintaining and improving system performance. Programming exercises in low and high level languages. Includes: Experiential Learning Activity. Also listed as OSS 3001. Prerequisite(s): NET 2013. Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3004 [0.5 credit]**Data Structures**

Specification and design of abstract data types and their implementation as stacks, queues, trees, tables and graphs. Common and useful examples. Parsing and finite state machines. Analysis of algorithms, recursion, re-entrance. Special focus: abstraction, interface specification and hierarchical design using object-oriented programming. Includes: Experiential Learning Activity. Also listed as OSS 3004. Precludes additional credit for PLT 3010 (no longer offered). Prerequisite(s): BIT 2400. Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3006 [0.5 credit]**Network Management and Measurements**

Key network management models (FCAPS, TMN), protocols and standards, such as SNMP. Introduction to and use of various management tools and methodologies. Current trends in network management and measurement. Security issues in collecting networking management information. Includes: Experiential Learning Activity. Prerequisite(s): NET 3000 and NET 3004. Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3007 [0.5 credit]**Network Security**

Basics of network security. Students are introduced to the goals of IT security, common threats and countermeasures including firewalls, intrusion detection and prevention systems (IDPS) and virtual private networks. Several operating environments will be studied as examples. Also includes a section on computer ethics.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2012.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3008 [0.5 credit]**Advanced Network Routing**

Routing IP at the enterprise level, within and between, autonomous systems. Advanced control and optimization of routing protocols and manipulation of traffic paths with multiple routing protocols. Working knowledge of Internet reachability via BGP.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2012.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 3010 [0.5 credit]**Web Programming**

Architectures, protocols and languages used to develop dynamic Web content, including HyperText Markup Language (HTML, DHTML), Universal Resource Identifiers (URI) and HyperText Transport Protocol (HTTP) and Common Gateway Interface (CGI). JavaScript and Java are used to model cross-platform Web programming.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400, NET 3000.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3011 [0.5 credit]**Advanced Network Switching**

VLANs and inter-VLAN routing in a multilayer switched environment. Variants of STP and the use of related enhancements. Techniques for network redundancy and load balancing. Securing a switched infrastructure. Architectures and techniques for delivering converged traffic in an enterprise environment.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2012.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 3012 [0.5 credit]**IP Architectures and Solutions**

An exploration of deployment options that can be implemented atop of a MPLS network. The focus is on technologies and architectures that serve to enhance IP delivery, or IP service leveraging the MPLS infrastructure. Includes Layer 2 and 3 tunneling techniques. Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity

Prerequisite(s): NET 3008.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 3900 [0.5 credit]**Wireless Networks**

Design and configuration of Wi-Fi networks as used in commercial and enterprise venues. Topics include 802.11 family of protocols, wireless transmission, RF design, security methods and protocols, and system design. Topologies include campus, bridge and remote access.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2007.

Lectures two hours a week, tutorial/laboratory three hours a week.

NET 4000 [0.5 credit]**Emerging Network Technologies**

Overview of technologies, protocols and techniques related to Information Technology networking that are either in their early stage of adoption or are not yet mainstream (i.e. beta or prototype stage). Focus will vary from year to year to reflect the evolutionary nature of this domain.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Networking program or permission of the instructor.

Also offered at the graduate level, with different requirements, as ITEC 5110, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4001 [0.5 credit]**Network Simulation**

Introduction to discrete event simulation and network modeling; fundamental stochastic models for networking; introduction to queueing theory; random numbers; analysis of simulation data; confidence intervals. Use of different software tools to plan and perform simulations.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2000.

Also offered at the graduate level, with different requirements, as ITEC 5113, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4003 [0.5 credit]**Computer Systems Architecture**

History and evolution of computers. Models and functional descriptions of CPU, bus, memory, I/O. Internal data transfer and storage concepts. Bus protocols. Memory organization and cache principles. Digital logic and simple logic designs of CPU, buses, memory. Concepts of virtual machines, parallel computing, cloud computing.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in the Networking program, NET 2003 and NET 3001.

Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4005 [0.5 credit]**Networked Applications**

Architectures for computing in modern data networks that adopt the Internet architecture. Topics covered include socket programming, RPC and RMI. Client-server and peer-to-peer models. Emerging application architectures.

Includes: Experiential Learning Activity

Prerequisite(s): NET 3004 and NET 3010.

Also offered at the graduate level, with different requirements, as ITEC 5114, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4007 [0.5 credit]**Multimedia Networking**

Audio and video compression. H.261, JPEG, MPEG and DVI. Accessing audio and video from a web server. Real Time Streaming Protocol (RTSP). Multimedia operating systems. Multimedia database. Network support for multimedia applications. Multimedia synchronization.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.

Also offered at the graduate level, with different requirements, as ITEC 5111, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4009 [0.5 credit]**Troubleshooting IP Networks**

Integrates planned maintenance and troubleshooting techniques, including, tools, applications and formalized methodologies. Study of issues in focused areas (such as routed vs. switched environments, addressing services, performance, security, VPN), culminating in problem resolution throughout a complex enterprise network.

Includes: Experiential Learning Activity

Prerequisite(s): NET 3011, NET 3008.

Lectures three hours a week, tutorial/laboratory three hours a week.

NET 4010 [0.5 credit]**Secure Mobile Networking**

The concept, principle and rationale of mobile networking. Mobile network architecture, protocols, mobility management, routing and mobile TCP/IP; Security challenges, vulnerabilities and threats in mobile networks; Security defense techniques and countermeasures in mobile networks.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in Networking program or permission of the instructor.

Also offered at the graduate level, with different requirements, as ITEC 5112, for which additional credit is precluded.

Lectures three hours a week, tutorial/laboratory one hour a week.

NET 4011 [0.5 credit]**Advanced Topics in Network Security**

Understanding classes of advanced attacks. Building secure networks. Adversarial Machine Learning. Security in clouds, virtualized networks, and IoT. Understanding impact of OS and software security issues. Security in next generation networks such as 5G.

Prerequisite(s): NET 3007.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4012 [0.5 credit]**Cloud Computing and Virtualization**

The basics of cloud computing and its driving technology behind: virtualization. Topics include how virtual machines and containers are deployed and orchestrated; how various resources and networks are virtualized and managed; hypervisor technology; virtual network management and micro-segmentation; cloud service provisioning; cloud security.

Includes: Experiential Learning Activity

Prerequisite(s): NET 2013 and NET 3006.

Lectures three hours a week, tutorial/laboratory two hours a week.

NET 4901 [1.0 credit]**NET Capstone Project**

This course provides the opportunity to apply knowledge gained in previous courses towards the design and implementation of a major Networking related project.

Working in teams or as individuals under the direction of faculty members, students undertake projects internally or in collaboration with industry.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Networking program.

Tutorial hours arranged.

Optical Systems and Sensors (OSS)

Optical Systems and Senors (OSS) Courses

OSS 1002 [0.5 credit]

Applications in Photonics & Optoelectronics

Survey of the history and future of photonics. Photonics benefits and impact on technology and society. Emerging applications of photonics in industry and commercial products. The forces (business, social, political, economic, technical, and educational) that influence the development, adoption and success or failure of technologies.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1002 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 1003 [0.5 credit]

Optics/Optical Fibers (Principles)

Principles of optics, optical fiber, waveguides and hands-on experience with optical components. Optical fiber manufacturing and variety of industrial applications. Topics covered include: optical sources, detectors, fiber modes and mode-coupling, couplers, multiplexers, optical amplifiers, physical layer of optical networks, dispersion and nonlinear effects management.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1003 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 1005 [0.5 credit]

Introduction to Optics

Physics of waves, optics and light propagation through lectures and lab experiments. Geometrical optics, refraction and reflection, interference, diffraction and polarization, thin lens equation, laser beams, Michelson interferometer, birefringence, and Abbe theory of imaging. Electromagnetic spectrum, quantum nature of light, photons, and photoelectric effect.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1005 (no longer offered).

Prerequisite(s): BIT 1203, restricted to students in the B.I.T. degree program.

Lectures two hour a week, tutorial/laboratory three hours a week.

OSS 1006 [0.5 credit]

Introduction to Automation and Simulation

Introduction to basic programming in both the Matlab and Labview environments. Program development, basic structures (loops, control structures), I/O, data visualization and graphing will be covered. Students will learn to use Labview to develop basic applications and model simple physical systems with Matlab.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1006 (no longer offered).

Prerequisite(s): restricted to students in the B.I.T. degree program.

Lectures two hour a week, tutorial/laboratory two hours a week.

OSS 2001 [0.5 credit]

Fundamentals of Light Sources

Introduction to incoherent light sources and lasers. Lasers operation, energy levels, quantum mechanics basics. Pumping/excitation, population inversion, laser cavity design, gain and loss, and characteristics of laser emission. An extensive lab manual of relevant experiments, variety of lasers, spectrometers, and detection equipment will be used.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2001 (no longer offered).

Prerequisite(s): BIT 1201. Restricted to students in the BIT degree program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 2002 [0.5 credit]

Optical Communication Networks I

Adaptive Optical Communication Networks with 10Gb/s-200Gb/s Packet-Optical Platforms and WebServers, OTN, flexible WaveLogic Photonics, ROADM, SONET/SDH, programmable network, optimized mapping techniques, optical carriers (OC-n/STM-m). Extensive hands-on experience using state-of-the-art Optophotonics Lab to work on OAM&P, facility/equipment, synchronization, bandwidth management, performance monitoring and other functionalities.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2002 (no longer offered).

Prerequisite(s): OSS 1003.

Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 2003 [0.5 credit]**Laser Systems**

Laser theory, devices and systems. Safety procedures, laser power supplies, and laser system applications. Solid state, gas, and other types of lasers. Basic material processing, micro machining, bio/medical, and military applications will be covered. Hands-on experience with advanced laser equipment in lab.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2003 (no longer offered).

Prerequisite(s): OSS 2001 or PLT 2001 (no longer offered).

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 2005 [0.5 credit]**Circuits and Signals**

Students learn properties of electricity and measurement techniques. Topics covered include RMS, average, applied, peak-to-peak and instantaneous values. Lab experiments deal with RC and RL circuits and LC filters. RLC circuits, and series and parallel resonance are also covered.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2005 (no longer offered).

Prerequisite(s): BIT 1204 or PHYS 1004 or PHYS 1002.

Restricted to students in the BIT degree program.

Lectures two hours a week, laboratory and problem analysis three hours a week.

OSS 2006 [0.5 credit]**Integrated Circuits**

Fundamentals of logic circuitry in digital systems are studied including basic logic gates, Boolean algebra, signal decoding, logic circuit design, flip-flop circuits, timers and counters. The proper use of semi-conductor components is demonstrated through the use of laboratory experiments.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 2507, PLT 2006 (no longer offered).

Prerequisite(s): OSS 2005 or PLT 2005 (no longer offered). Restricted to students in the B.I.T. degree program.

Lectures two hours a week, laboratory and problem analysis three hours a week.

OSS 2008 [0.5 credit]**Manufacturing Photonics Components**

Manufacturing techniques and methods used to produce photonics components and devices/systems. Micro assembly, adhesives, optical tests and measurement, lean manufacturing and quality control standards (Telcordia). Laboratory exposure to optical component production processes: grinding, polishing, coating, mounting, tolerance and accuracy.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 1004 and PLT 2008 (no longer offered).

Prerequisite(s): OSS 1002 or PLT 1002 (no longer offered). Restricted to students in the B.I.T. degree program.

Lectures two hours a week, laboratory two hours a week.

OSS 2009 [0.5 credit]**Assembly and Machine Language**

Structured approach to assembly language programming. Topics include data and address registers, data and address busses, condition code register and stack pointers, machine code format, instruction sizes, operand encoding, translation of source code into machine language, and how the processor executes instructions.

Includes: Experiential Learning Activity

Precludes additional credit for NET 1004 (no longer offered), NET 2013, PLT 1007 (no longer offered), PLT 2009 (no longer offered).

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory one hour a week.

OSS 2010 [0.5 credit]**Signals and Systems**

This course provides a solid theoretical foundation for the analysis and processing of experimental data, and real-time experimental control methods. Topics include various properties of signals and systems, convolution, the Fourier transform, sampling theorem, z-transform, spectral analysis, filter design, and system identification.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 2010 (no longer offered).

Prerequisite(s): BIT 1200 and BIT 1201. Restricted to students in the B.I.T. degree program.

Lectures three hours a week, tutorial one hour a week.

OSS 3000 [0.5 credit]**Optical Communication Networks II**

Operation, management and maintenance of metro/long-haul optical network elements and systems. Hands-on skills using GUI, Transaction Language One (TL1), optical network management to perform: alarm provisioning, line and path protection switching, security, data communications management, optical network backup and restore, load upgrade and installation management. Includes: Experiential Learning Activity
Precludes additional credit for PLT 3000 (no longer offered).

Prerequisite(s): OSS 2002.

Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 3001 [0.5 credit]**Real-time Systems**

Principles of event-driven systems, review of computer organization; parallel and serial interfaces; programmable timer; I/O methods; polling and interrupts. Real-time kernels. Critical design consideration: concurrency, dead lock, synchronization. Maintaining and improving system performance. Programming exercises in low and high level languages.

Includes: Experiential Learning Activity

Also listed as NET 3001.

Precludes additional credit for PLT 3002 (no longer offered).

Prerequisite(s): OSS 2009 or PLT 2009 (no longer offered).

Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 3002 [0.5 credit]**Design of Optical Components and Systems**

Optical ray-tracing for analysing systems of sources, lenses, mirrors, prisms, fibers, diffractive elements, MEMS. Zemax® fundamentals, pupils, aspherics, non-sequential tracing, aberrations, image metrics, optimization/merit functions. Applications: imaging, illumination, lasers. Trade-offs, mechanical constraints, tolerances and cost. Physical optics modeling of beam propagation. Near-field diffraction and waveguides.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3004 (no longer offered).

Prerequisite(s): OSS 1003 or PLT 1003 (no longer offered).

Lectures two hours a week, tutorial/laboratory three hours a week.

OSS 3003 [0.5 credit]**Fundamentals of Electromagnetics**

Review of basic vector calculus followed by an introduction to electrostatics and magnetostatics. Maxwell's equations and EM wave solutions. EM waves in dielectrics media, reflection, refraction, Fresnel relations and Brewster angle. Introduction to guided waves emphasizing slab waveguides.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3003 (no longer offered).

Prerequisite(s): BIT 1204 and BIT 2010.

Lecture and tutorial three hours a week.

OSS 3004 [0.5 credit]**Data Structures**

Specification and design of abstract data types and their implementation as stacks, queues, trees, tables and graphs. Common and useful examples. Parsing and finite state machines. Analysis of algorithms, recursion, re-entrance. Special focus: abstraction, interface specification and hierarchical design using object-oriented programming.

Includes: Experiential Learning Activity

Also listed as NET 3004.

Precludes additional credit for PLT 3010 (no longer offered).

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 3009 [0.5 credit]**Project Management**

Identification, selection, initiation, and organization of projects. Risk assessment, budget issues, communication, project scheduling, performance monitoring and control. Emphasis on practical techniques related to the field of photonics using case studies.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3009 (no longer offered).

Prerequisite(s): third year standing in the Optical Systems and Sensors program.

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 3012 [0.5 credit]**Digital Signal Processing**

Operations-related topics including: sampling/reconstruction of continuous time signals, Fourier and Z-transforms, Discrete Fourier Transform (DFT), Fast Fourier Transform (FFT). Examination of other time and frequency domain techniques for designing and applying infinite impulse response (IIR) and finite impulse response (FIR) digital filters.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3012 (no longer offered).

Prerequisite(s): OSS 2010 or PLT 2010 (no longer offered).

Lectures three hours a week, tutorial one hour a week.

OSS 3013 [0.5 credit]**Software Design for Optical Systems and Sensors**

Provides students with knowledge and expertise to design and develop complex software systems and programs for common optical systems and sensors using Python. Topics include: system and requirement analysis, algorithms, component identification, common design patterns, and working with reusable components.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3013 (no longer offered).

Prerequisite(s): BIT 2400.

Lectures three hours a week, tutorial two hours a week.

OSS 3014 [0.5 credit]**Optical Waves, Waveguides, and Sensors**

Analysis of guided-wave propagation and sensors. Topics include Maxwell's time-dependent wave equations, dielectric waveguides (slab, planar, segmented, rib, strip), optical fibres (modes, dispersion relations, propagation in dispersive media, nonlinear fibres), beam propagation methods, free space beam propagation, waveguide devices, and study of sensors technology.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 3014 (no longer offered).

Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).

Lectures three hours a week, tutorial two hours a week.

OSS 4001 [0.5 credit]**Optoelectronic Devices**

Review of semiconductors, semiconductor lasers, detectors, photovoltaics. Electro, magneto and acousto-optic modulation devices. Transmitters, receivers, photo diodes, fiber sensors, and amplifiers, Mach-Zehnder interferometers. Polarization-mode dispersion. Experiments on non-linear optical elements, Sagnac and ring resonator, optical modulation.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4001 (no longer offered).

Prerequisite(s): OSS 3002 or PLT 3004 (no longer offered).

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4004 [0.5 credit]**Medical Imaging and Biosensors**

Biological and medical photonics. Effect of light on biological systems, medical imaging, medical treatments, biological research and bio/medical applications. Laser manipulation of cells, laser surgery, and photo-therapy. Biophotonic lab experiments with scanning confocal microscopes, endoscopes, DNA scanners.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4004 (no longer offered).

Prerequisite(s): OSS 3003 or PLT 3003 (no longer offered).

Lectures two hours a week, tutorial/laboratory two hours a week.

OSS 4006 [0.5 credit]**Image Processing**

Developing and evaluating algorithms for extracting the necessary information signals. Topics include filter design, fast transforms, adaptive filters, spectrum estimation and modeling, sensor array processing, image processing, motion estimation from images, applications in biomed, computer-aided tomography, image restoration, robotic vision, and pattern recognition.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4006 (no longer offered).

Prerequisite(s): BIT 2400 and OSS 3012.

Lectures three hours a week, tutorial/laboratory two hours a week.

OSS 4008 [0.5 credit]**Remote Sensing**

Introduction to the basics of remote sensing, characteristics of remote sensors, and applications. Topics include: image acquisition and data collection, LIDAR sensors and platforms and derived digital products, imagery analysis, topographic mapping, and 3D modeling of urban infrastructure for autonomous vehicles.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4008 (no longer offered).

Prerequisite(s): OSS 3014 or PLT 3014 (no longer offered).

Lectures three hours a week, tutorial two hours a week.

OSS 4009 [0.5 credit]**Computer Vision**

Introduction to topics in computer vision, including: fundamentals of image formation, camera imaging geometry, f camera models, camera calibration, structure from motion, feature detection and matching, depth and stereo, image stabilization, image classification, automated alignment, scene understanding, recognition, and image searching.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4009 (no longer offered).

Prerequisite(s): OSS 4006 or PLT 4006 (no longer offered).

Lectures three hours a week, tutorial two hours a week.

OSS 4900 [1.0 credit]**OSS Capstone Project**

Research project develops students' ability to direct own learning and pursue advanced study in variety of subjects. Select topic, perform literature search, theoretical background, preliminary measurements, calculations, and design. Present findings in a preliminary thesis. Encourage writing technical papers. Research opportunities with industry and academia.

Includes: Experiential Learning Activity

Precludes additional credit for PLT 4900 (no longer offered).

Prerequisite(s): fourth-year standing.

Tutorial hours arranged.

Information Technology (ITEC)

Information Technology (ITEC) Courses**ITEC 1005 [0.5 credit]****Web Development**

Introduction to Web development. Combining graphics, text, audio, and video to create Web sites; developing different, major working Web sites on an individual basis and in groups, using valid HTML5, cascading style sheets (CSS3), JavaScript and XML structures.

Precludes additional credit for IMD 1005.

Lectures and tutorials five hours a week.

ITEC 1100 [0.5 credit]**Introduction to Interactive Media Design**

Introduction to interactive multimedia and design, focused on the production and processes of animation, visual fx, game design and development, web design and development, and user experience/interfaces.

Topics include: mark-up languages, design process/problem-solving tools, human-centered design, product development, ethics, and copyright and intellectual property.

Precludes additional credit for IMD 1000.

Prerequisite(s): For students not enrolled in CSIT programs.

Lectures three hours a week.

ITEC 1400 [0.5 credit]**Introduction to Programming and Problem Solving**

Introduction to basic concepts of procedural programming and algorithm design in C. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, structures, arrays, pointers, debugging, algorithmic thinking and pseudocode, computer architecture, operating systems, and libraries.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1401.

Lectures/tutorials six hours a week.

ITEC 1401 [0.5 credit]**Introduction to Scripting and Problem Solving**

Introduction to basic concepts of object-oriented scripting and algorithm design in Python. Topics include: basic variables, functions, operators, program control with iteration and conditionals, I/O operations, text and file processing, arrays, tuples, lists, debugging, algorithms and pseudocode, computer architecture, operating systems, and libraries.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1400, COMP 1005, COMP 1405, ITEC 1400.

Lectures/tutorials six hours a week.

ITEC 2000 [0.5 credit]**Multimedia Data Management**

Issues involving the back-end organization of information focusing on databases and database design, server-side scripting, the structured query language (SQL), digital rights management, and watermarking.

Precludes additional credit for BIT 2008, COMP 2006 (no longer offered), IRM 2000 (no longer offered), IMD 2000 (no longer offered).

Prerequisite(s): ITEC 1400 or ITEC1401 and ITEC 1005 or BIT 1400 and IMD 1005 or IRM 1005.

Lectures and tutorials five hours a week.

ITEC 2100 [0.5 credit]**Data Visualization**

Web-based data visualization techniques and systems.

Good design practices for visualization, tools for visualization of data from a variety of fields, and programming of interactive web-based visualizations focusing on JavaScript, CSS, SVG and the D3 library.

Includes: Experiential Learning Activity

Prerequisite(s): ITEC 2000 or BIT 2008.

Lectures/labs five hours a week.

ITEC 2400 [0.5 credit]**Intermediate Programming**

Introduction to object-oriented programming and algorithm design in C++. Topics include code and data encapsulation using classes and objects, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists and searching.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2401.

Prerequisite(s): ITEC 1400.

Lectures three hours a week, tutorial three hours a week.

ITEC 2401 [0.5 credit]**Intermediate Scripting**

Introduction to advanced object-oriented scripting and algorithm design in Python. Topics include class design and encapsulation, inheritance, polymorphism, object-oriented design, data and code abstraction, program efficiency, user interface objects, event-driven systems, and an introduction to linked-lists, sorting, and searching.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2400, COMP 1006, COMP 1406, ITEC 2400.

Prerequisite(s): ITEC 1401.

Lectures/tutorials six hours a week.

ITEC 3100 [0.5 credit]**Immersive Storytelling**

The craft of digital storytelling, creating compelling online and game-engine packages. Using a variety of narrative formats, interactive tools, and digital content, including blogs and RSS feeds, developing an in-depth story using leading edge technologies and techniques.

Includes: Experiential Learning Activity

Workshop three hours a week.

ITEC 4007 [0.5 credit]**Dynamics and Physics-Based Animation**

This course deals with the essentials of physics-based animations and dynamics; topics include basics of animation mechanics, collision detection, particle systems, and dynamic systems (cloth, fluid, and hair).

Includes: Experiential Learning Activity

Precludes additional credit for IMD 4007 (no longer offered).

Prerequisite(s): IMD 3002 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4009 [0.5 credit]**Rigging and Advanced Character Animation**

This course covers the elements of rigging and advanced character animation; topics include the basics of forwards/inverse kinematics, controls, and weighting, essentials of human and creature rigging, retargeting, face and body motion capture, and motion studies for advanced keyframe animation.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3002 and IMD 3900 or equivalent.

Lectures three hours a week, tutorial two hours a week.

ITEC 4010 [0.5 credit]**Visual Effects and Compositing**

This course covers the essentials of Visual FX and compositing, topics include camera setups (motion control systems), set issues, match-moving, image-based lighting, chroma-keying and object extraction, colour correction, 2D tracking, and rotoscoping.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3002 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4011 [0.5 credit]**Artificial Intelligence for Digital Media**

This course covers the basics of artificial intelligence in games and animation, including behaviour and crowd systems (e.g. boids, reciprocal velocity obstacles, social forces, agent-based modelling, cellular automata), path finding and route planning, as well as procedural animation systems.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400 or ITEC 2401 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4012 [0.5 credit]**Web Application Frameworks**

A detailed look at web application frameworks, focusing client and server-side frameworks that enable more advanced user interactions, including configuration, understanding functionality, and develop with them effectively.

Includes: Experiential Learning Activity

Prerequisite(s): ITEC 1005 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4014 [0.5 credit]**User Experience Design and Accessibility**

User experience (UX) of interactive systems, including product and service design, usability and UX research. Emphasis on accessibility, with topics including creating accessible systems for users with a range of abilities, accessibility standards, and validation of designs in a practical context.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 3004 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4015 [0.5 credit]**Digital Audio and Music**

Introduces the concepts of digital audio & music specifically how it relates to digital media (games, film, mobile, etc). Topics include, digital audio recording, multitrack production and mixing, foley effects, musical interference and intonations, signal processing for effect, time & spatial variations, and studio recording.

Includes: Experiential Learning Activity

Studio five hours a week.

ITEC 4016 [0.5 credit]**Virtual and Augmented Reality**

Design, development, and evaluation of virtual and augmented reality systems. Topics include VR/AR history, applications, hardware (display and input devices), software, interaction techniques for navigation, selection, manipulation, human factors, and empirical validation. Projects will use modern 3D game engines and VR/AR devices.

Includes: Experiential Learning Activity

Prerequisite(s): IMD 2006 and IMD 3002 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4017 [0.5 credit]**Photo and Non-Photo-Realistic Rendering**

This course deals with physically-based rendering methods and techniques in the global illumination field; topics include the rendering equation, ray and path tracing, radiosity rendering, photon mapping, final gather methods, materials and shaders, as well taking a look at non-photo-realistic rendering.

Includes: Experiential Learning Activity

Lecture three hours a week, tutorial two hours a week.

ITEC 4018 [0.5 credit]**GPU Programming and Real-Time Rendering**

This course deals with the programming of the Graphics Processing Unit (GPU); topics include real-time rendering, shaders, and other advanced programming techniques that utilise single-instruction / multiple thread parallel processing units.

Includes: Experiential Learning Activity

Prerequisite(s): BIT 2400 or equivalent.

Lecture three hours a week, tutorial two hours a week.

ITEC 4019 [0.5 credit]**Directing and Cinematography for Digital Storytelling**

This course covers the basics of being a director in a digital storytelling environment, including the basics of direction, dealing with actors, following scripts, and dealing with elements of cinematography; including lighting, cameras, shade, and shadow.

Includes: Experiential Learning Activity

Lecture three hours a week, tutorial two hours a week.

ITEC 4020 [0.5 credit]**Environment and Architectural Modelling**

The course deals with the creation, development, and use of assets for digital environments; with specific focus on the workflows associated with scene construction and architectural modelling for a variety of real-time and non-real-time systems.

Includes: Experiential Learning Activity

Studio five hours a week.

Integrated Science (INSC)

Integrated Science (INSC) Courses**INSC 3907 [0.5 credit]****Topics in Integrated Science**

Assignment(s) reviewing current research topics.

Prerequisite(s): at least 0.5 credit at the 3000-level or higher (may be taken concurrently) and permission of the Institute Director.

INSC 3909 [0.5 credit]**Independent Study**

The student, under the supervision of a faculty member, prepares a study in the focus areas of the student's program. Prior to or immediately upon registration, the student must consult with the ISI Director for topic approval and course regulations.

Includes: Experiential Learning Activity

Prerequisite(s): at least 0.5 credit at the 3000-level or higher (may be taken concurrently) and permission of the Institute Director.

INSC 4907 [1.0 credit]**Honours Essay and Research Proposal**

A review of current research, and a research proposal, under the supervision of a faculty advisor. (Note: the research project is not actually carried out.) Graded on the literature review, the research proposal, and an oral defense. The student arranges for a faculty advisor.

Includes: Experiential Learning Activity

Precludes additional credit for INSC 4908 [1.0].

Prerequisite(s): fourth-year standing in Honours Integrated Science and permission of the Institute.

INSC 4908 [1.0 credit]**Honours Project**

Under the supervision of a faculty adviser, the student carries out a research project in the IS areas of study. Prior to or immediately upon registration, the student must consult with the ISI Director for topic approval and course regulations.

Includes: Experiential Learning Activity

Precludes additional credit for INSC 4907 [1.0].

Prerequisite(s): permission of the Institute Director.

Interdisciplinary Public Affairs (IPAF)

Interdisciplinary Public Affairs (IPAF) Courses**IPAF 1001 [0.5 credit]****Investigations in Public Affairs**

An introductory course emphasizing the development of writing, research, and analytical skills through the concentrated investigation of selected topics in Public Affairs. Topics will be offered by various Departments within the Faculty of Public Affairs. Topics may vary from year to year.

Prerequisite(s): permission of the Department within the Faculty of Public Affairs.

Seminar three hours per week.

IPAF 2000 [0.5 credit]**Quantitative Approaches to Policy Analysis**

Related approaches to collecting, interpreting, and presenting quantitative information in the context of specific public policy issues such as immigration, globalization, discrimination, health care, and the environment. Development of fundamental logical, numerical, and statistical skills.

Prerequisite(s): open to students in any program other than those leading to one of the following degrees: B.Com., B.C.S., B.Eng., B.I.B., B.I.D., B.Math., B.Sc. Lectures three hours a week, tutorials one and half hours a week.

IPAF 2800 [0.5 credit]**Selected Topics in Public Affairs**

Specialized topics in the area of public affairs. Topics vary from year to year and are posted at carleton.ca/fpa in advance of the registration period.

Prerequisite(s): Normally restricted to students in the second year of a B.P.A.P.M., B.G.In.S., B.Econ, B.J., B.Co.M.S., B.S.W., or B.A. program in the Faculty of Public Affairs.

Lecture three hours per week

IPAF 3800 [0.5 credit]**Selected Topics in Public Affairs**

Specialized topics in the area of public affairs. Topics vary from year to year and are posted at carleton.ca/fpa in advance of the registration period.

Prerequisite(s): Normally restricted to students in the third year of a B.P.A.P.M., B.G.In.S., B.Econ, B.J., B.Co.M.S., B.S.W., or B.A. program in the Faculty of Public Affairs. Lecture three hours per week.

IPAF 4800 [0.5 credit]**Selected Topics in Public Affairs**

Seminar on a specialized topic in the area of public affairs. Topics will vary from year to year and are posted at carleton.ca/fpa in advance of the registration period.

Prerequisite(s): fourth-year Honours standing or permission of the instructor.

Seminar three hours per week.

IPAF 4900 [0.5 credit]**Research Experience Course**

This course gives students an opportunity to participate in a research project designed by a faculty member.

Students gain work experience, learn new materials, and acquire research-oriented skills. Course expectations, learning outcomes and evaluation criteria are established by the supervising faculty member.

Includes: Experiential Learning Activity

Prerequisite(s): third year honours standing, GPA of 9.5 and permission of department.

Interdisciplinary Science (ISCI)

Interdisciplinary Science (ISCI) Courses**ISCI 1001 [0.5 credit]****Introduction to the Environment**

The nature of the biosphere: scientific bases of important environmental issues; evolution of life; properties and dynamics of populations and ecosystems; biodiversity; introduction to identification skills; sustainability of renewable resources, including food. Not acceptable for credit in a Bachelor of Science program.

Precludes additional credit for ISCI 1000.

Prerequisite(s): a knowledge of Grade 10 advanced level Mathematics will be assumed.

Lectures/demonstrations three hours a week and project assignments.

ISCI 2000 [0.5 credit]**Natural Laws**

Fundamental concepts and their environmental application for the non-science student: properties of atoms and molecules, chemical reactions, nuclear processes, mechanics, thermodynamics, electricity and magnetism; applications to energy production and consumption. Precludes additional credit for ISCI 1002 (no longer offered). Not acceptable for credit in a Bachelor of Science program.

Prerequisite(s): ISCI 1001 or GEOG 1010 or permission of the Institute.

Lecture/demonstrations three hours a week, a one-hour tutorial a week, and project assignments.

ISCI 2002 [0.5 credit]**Human Impacts on the Environment**

Air and water pollution; global climatic change; waste management; industrial chemicals; sources and uses of energy; nuclear energy and radiation; risk assessment of technological hazards. Acceptable only as a free elective in a Bachelor of Science program.

Prerequisite(s): ISCI 2000 or ISCI 1002 or two experimental science grade 12 U/M courses or one first year university experimental science credit.

Lectures/demonstrations three hours a week and project assignments.

Interdisciplinary Science and Practice (ISAP)

Interdisciplinary Science and Practice (ISAP) Courses**ISAP 1001 [0.5 credit]****Introduction to Interdisciplinary Science**

What is interdisciplinarity and what are the challenges and opportunities of collaboration within and across disciplines in science and beyond? Topics include types of biases, public datasets and science communication.

Lectures and discussion three hours per week.

ISAP 1002 [0.5 credit]**Seminar in Interdisciplinary Science**

Exploring the role of interdisciplinarity in discovery and innovation, and discussion of selected issues facing society and the role of science. Topics include finding information, collaboration and science communication tools.

Prerequisite(s): ISAP 1001.

Seminar three hours per week.

ISAP 2001 [0.5 credit]**Foundations in Critical Inquiry**

What is science and the scientific method? Topics include the scientific method, credible sources of information, knowledge gaps, the impact of scientific discoveries, and discussion of their local and global implications.

Prerequisite(s): ISAP 1002 or permission of the Institute.

Lecture three hours per week, workshop two hours per week.

ISAP 2002 [0.5 credit]**Research Principles for Interdisciplinary Science**

Exploring how research is conducted. Topics include publicly available databases, the role of communication in research, stakeholders and participants, and the process of identifying knowledge gaps and developing research questions.

Prerequisite(s): ISAP 2001 or permission of the Institute.

Lecture three hours per week.

ISAP 3001 [0.5 credit]**Principles and Applications in Data Analysis**

Development of strategies for obtaining and analyzing data. Topics include: survey of publicly available science-data resources; identification of coincidental, correlational and causal relationships; statistical data-analysis techniques; concepts of risk and error propagation in measured and calculated values. Applications in the physical and biological sciences.

Prerequisite(s): ISAP 2002, COMP 1005 and STAT 2507 or permission of the Institute.

Lecture three hours per week, workshop two hours per week.

ISAP 3002 [0.5 credit]**Applications in Interdisciplinary Research**

Application of skills from Interdisciplinary Science and Practice (ISAP) courses to develop a research proposal. Topics include: research ethics; identification of stakeholders; inclusive consultation, collaboration and dissemination strategies.

Prerequisite(s): ISAP 2002 or permission of the Institute.

Lecture three hours per week, workshop two hours per week.

ISAP 3003 [0.5 credit]**Science Communication**

How is science perceived and how has science been communicated? Students will use case studies to assess examples of science communication with varying outcomes. Topics include the principles of effective science communication, the range of tools available, and knowing the audience.

Includes: Experiential Learning Activity

Prerequisite(s): ISAP 2002 or permission of the Institute.

Lecture and seminar three hours per week.

ISAP 3004 [0.5 credit]**Science Policy**

Exploration of how science-related policy is developed and the impact of policy on science. Topics include policy frameworks, stakeholder roles, power relationships, commercialization and the funding of science.

Prerequisite(s): ISAP 3003 or permission of the Institute.

Lecture and seminar three hours per week.

ISAP 3700 [0.5 credit]**Topics in Interdisciplinary Science**

Specific topics of current interest. Topics may vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): Second year standing in the

Interdisciplinary Science and Practice program or permission of the Institute.

Seminar/workshop three hours per week.

ISAP 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

ISAP 4700 [0.5 credit]**Topics in Interdisciplinary Science**

Specific topics of current interest. Topics may vary from year to year.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing in the Interdisciplinary Science and Practice program or permission of the Institute.

Seminar three hours per week.

ISAP 4901 [0.5 credit]**Directed Studies**

Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Interdisciplinary Science and Practice (ISAP) program and permission of the instructor.

ISAP 4906 [1.0 credit]**Capstone Course - Group Research Project**

Students will collaborate on a project that addresses a real-world issue in a team environment. Focus includes: design and completion of a research project; development of communication, critical inquiry, data analysis and research skills; and the opportunity to develop initiative, creativity and self-reliance.

Includes: Experiential Learning Activity

Precludes additional credit for ISAP 4907, ISAP 4908.

Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program and permission of the Institute.

Lecture, seminar and workshop four hours per week, as scheduled by the instructor.

ISAP 4907 [1.0 credit]**Capstone Course - Research Essay**

A substantial, independent essay or research proposal-based critical review and research proposal, using library, database and/or bioinformatic resources, under the direct supervision of the instructor. Topics include identification and critical review of resources, development of writing skills and formulation of research question and strategy.

Includes: Experiential Learning Activity

Precludes additional credit for ISAP 4906, ISAP 4908.

Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program or permission of the Institute.

Lecture, seminar and workshop four hours per week, as scheduled by the instructor.

ISAP 4908 [1.0 credit]**Capstone Course - Individual Research Project**

An independent research project under the direct supervision of a faculty adviser. Evaluation is based on a written thesis and a poster presentation.

Includes: Experiential Learning Activity

Precludes additional credit for ISAP 4906, ISAP 4907.

Prerequisite(s): fourth-year standing in the Interdisciplinary Science and Practice (ISAP) Honours program, a major CGPA of 9.0 or higher, and permission of the Institute.

Lectures and discussion as scheduled by the course coordinator; other hours as arranged with the faculty advisor.

ISAP 4999 [0.0 credit]**Science Communication Certificate Professional Development Workshop**

A one-day workshop providing practical skills development for becoming an effective science communicator. Topics for discussion will include defining the audience and framing of information, reviews of effective science communication, career opportunities for science communicators, and one-to-one analysis of participants writing skills. Graded SAT/UNS.

Includes: Experiential Learning Activity

Also listed as JOUR 4999.

Prerequisite(s): This course is restricted to students enrolled in the Certificate of Science Communication, and who have completed at least 2.0 credits towards the certificate, including one of COMS 2500 or ISAP 3003.

A one-day workshop

Interdisciplinary Studies (DIST)

Directed Interdisciplinary Studies (DIST) Courses**DIST 3901 [0.5 credit]****Themes in Interdisciplinary Inquiry**

Examination of topics of interest to a number of disciplines, along with various methods and styles of thought used to study them. Students will synthesize the various perspectives. Open only to students in Directed Interdisciplinary Studies and Child Studies.

Prerequisite(s): third-year standing in Child Studies or Directed Interdisciplinary Studies.

Seminar three hours a week.

DIST 3902 [0.5 credit]**Selected Topics in Interdisciplinary Studies**

An examination of one or more interdisciplinary topics selected by faculty to present interdisciplinary thought and research not available elsewhere in the university curriculum.

Prerequisite(s): third-year standing or permission of the Institute.

Seminar three hours a week.

DIST 4901 [0.5 credit]**Directed Reading**

Individual or small-group tutorial related to the theme of a Directed Interdisciplinary Studies program. Written permission from the Director of Interdisciplinary Studies is required before registering; please contact the DIS administrator.

Prerequisite(s): for Directed Interdisciplinary Studies students with fourth year Honours standing and a CGPA of 9.00 or better or permission of the Institute.

DIST 4902 [0.5 credit]**Directed Reading**

Individual or small-group tutorial related to the theme of a Directed Interdisciplinary Studies program. Written permission from the Director of Interdisciplinary Studies is required before registering; please contact the DIS administrator.

Prerequisite(s): for Directed Interdisciplinary Studies students with fourth year Honours standing and a CGPA of 9.00 or better or permission of the Institute.

DIST 4904 [0.5 credit]**Selected Topics in Interdisciplinary Studies**

An examination of one or more interdisciplinary topics selected by faculty to present interdisciplinary thought and research not available elsewhere in the university curriculum.

Prerequisite(s): fourth-year standing or permission of the Institute.

Seminar three hours a week.

DIST 4905 [0.5 credit]**Directed Interdisciplinary Studies Fieldwork I**

Fieldwork related to the theme of a Directed Interdisciplinary Studies program. A proposal with a fieldwork research question and a supervisor must be approved prior to registration. A paper relating the fieldwork to the student's DIS program must be submitted. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Directed Interdisciplinary Studies or permission of the Institute.

DIST 4906 [0.5 credit]**Directed Interdisciplinary Studies Fieldwork II**

Fieldwork related to the theme of a Directed Interdisciplinary Studies program. A proposal with a fieldwork research question and a supervisor must be approved prior to registration. A paper relating the fieldwork to the student's DIS program must be submitted. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Directed Interdisciplinary Studies or permission of the Institute.

DIST 4907 [0.5 credit]**Honours Essay**

Interdisciplinary research project designed to develop research and writing skills. Topics must be approved by the Program Coordinator also charged with marking the essay.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing.

DIST 4908 [1.0 credit]**Honours Project**

Interdisciplinary project for Honours Directed Interdisciplinary Studies students. In selecting a project, students must consult with the D.I.S. Program Coordinator. Students will work closely with a supervisor. Approval from the Program Coordinator to register for this course is necessary.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing in the B.A. Honours Directed Interdisciplinary Studies program and a 9.0 CGPA or higher.

International Affairs (INAF)

International Affairs (INAF) Courses**INAF 3001 [0.5 credit]****Understanding Policy in a Global Context**

Analysis of international policy processes relevant to governments, non-governmental organizations, international organizations and multinational corporations, drawing upon theories of international relations, political science, law and economics. Emphasis on analytical and normative aspects of public policy processes in international relations.

Prerequisite(s): third-year standing in the B.P.A.P.M. program and registration in the International Studies Specialization.

Lectures or seminars three hours per week.

INAF 3002 [0.5 credit]**Applied Policy in a Global Context**

Applications of policy analysis to specific international problems with an emphasis on institutions, multiple levels of governance, the role of non-governmental actors, and complex interconnected policy issues. Cases are drawn from international problems such as security, economics, development, the environment, migration, and health.

Prerequisite(s): third-year standing in the B.P.A.P.M. program and registration in the International Studies Specialization, and successful completion of INAF 3001.

Lectures or seminars three hours per week.

INAF 4101 [0.5 credit]**Topics in Conflict and Conflict Management**

An interdisciplinary course examining selected issues and policies in the area of conflict and conflict management.

Topics include subjects such as sources and causes of conflict, conflict mediation, and peacekeeping and peacebuilding.

Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the International Relations and Conflict Concentration of the International Policy Studies Specialization, or permission from Kroeger College and NPSIA.

Lecture or seminar three hours per week.

INAF 4201 [0.5 credit]**Topics in Security and Intelligence**

An interdisciplinary course examining selected issues and policies in the area of security and intelligence.

Topics include subjects such as intelligence oversight and privacy, comparative defence and security policy, terrorism, and counterterrorism.

Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the Security and Intelligence Concentration of the International Policy Studies Specialization or permission from Kroeger College and NPSIA.

Lecture or seminar three hours per week.

INAF 4301 [0.5 credit]**Topics in Rights and Human Development**

An interdisciplinary course examining selected issues and policies in the area of rights and human development.

Topics include subjects such as food security, access to water, income distribution and inequality, health and education.

Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the Rights and Human Development Concentration of the Development Policy Studies Specialization, or permission from Kroeger College and NPSIA.

Lecture or seminar three hours per week.

INAF 4401 [0.5 credit]**Topics in Global Economic Relations**

An interdisciplinary course examining selected issues and policies in the area of globalization and global economic relations. Topics include trade and development, multinationals and corporate social responsibility, debt and finance, intellectual property, and migration.

Prerequisite(s): fourth-year standing in the B.P.A.P.M. program and registration in the Global Economic Relations Concentration of the Development Policy Studies Specialization, or permission from Kroeger College and NPSIA.

Lecture or seminar three hours per week.

Italian (ITAL)

Italian (ITAL) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

ITAL 1010 [0.5 credit]**First-Year Italian I**

For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for ITAL 1110.

Four hours a week.

ITAL 1020 [0.5 credit]**First-Year Italian II**

Continuation of first-year Italian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for ITAL 1110.

Prerequisite(s): grade of C or higher in ITAL 1010, or permission of the School.

Four hours a week.

ITAL 1110 [1.0 credit]**Intensive First-Year Italian**

For students with no knowledge of Italian. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for ITAL 1010 and ITAL 1020.

Eight hours a week (one term).

ITAL 2010 [0.5 credit]**Second-Year Italian I**

Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for ITAL 2110.

Prerequisite(s): grade of C or higher in ITAL 1020 or ITAL 1110, or permission of the School.

Four hours a week.

ITAL 2020 [0.5 credit]**Second-Year Italian II**

Continuation of second-year Italian. Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for ITAL 2110.

Prerequisite(s): grade of C or higher in ITAL 2010, or permission of the School.

Four hours a week.

ITAL 2110 [1.0 credit]**Intensive Second-Year Italian**

Further study of Italian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for ITAL 2010 or ITAL 2020.

Prerequisite(s): grade of C or higher in ITAL 1020, ITAL 1110, or permission of the School.

Eight hours a week (one term).

ITAL 3110 [1.0 credit]**Intensive Third-Year Italian**

Further study of Italian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in ITAL 2000 (no longer offered), ITAL 2020, ITAL 2110, or permission of the School.

Six hours a week (one term).

ITAL 4110 [1.0 credit]**Intensive Fourth-Year Italian**

Advanced spoken and written Italian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Prerequisite(s): grade of C or higher in ITAL 3110, or permission of the School.

Six hours a week (one term).

ITAL 4900 [1.0 credit]**Independent Study**

Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.

ITAL 4901 [0.5 credit]**Independent Study**

Research in a topic in Italian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Italian, grade of C or higher in ITAL 3110 or equivalent, or permission of the School.

Japanese (JAPA)

Japanese (JAPA) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

JAPA 1010 [0.5 credit]**First-Year Japanese I**

For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for JAPA 1110.

Four hours a week.

JAPA 1020 [0.5 credit]**First-Year Japanese II**

Continuation of first-year Japanese. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for JAPA 1110.

Prerequisite(s): grade of C or higher in JAPA 1010, or permission of the School.

Four hours a week.

JAPA 1110 [1.0 credit]**Intensive First-Year Japanese**

For students with no knowledge of Japanese. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for JAPA 1010 and JAPA 1020. Eight hours a week (one term).

JAPA 2110 [1.0 credit]**Intensive Second-Year Japanese**

Further study of Japanese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 1020 or JAPA 1110, or permission of the School.

Eight hours a week (one term).

JAPA 3010 [0.5 credit]**Third-Year Japanese I**

Further study of Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies.

Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 2110, or permission of the School.

Three hours a week.

JAPA 3011 [0.5 credit]**Reading in Japanese – Kanji I**

Intended for students taking JAPA 3010 and those who want to learn kanji in depth and become proficient in reading various Japanese texts. The course is intended primarily for students who do not use Chinese characters in their first language.

Prerequisite(s): grade of C or higher in JAPA 2110 or permission of the School.

Three hours a week.

JAPA 3020 [0.5 credit]**Third-Year Japanese II**

Continuation of third-year Japanese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 3010, or permission of the School.

Three hours a week.

JAPA 3021 [0.5 credit]**Reading in Japanese – Kanji II**

A continuation of Reading in Japanese – Kanji I. Further development of reading skills in Japanese. Intended primarily for students who do not use Chinese characters in their first language.

Prerequisite(s): grade of C or higher in JAPA 3011 or permission of the School.

Three hours a week.

JAPA 4010 [0.5 credit]**Fourth-Year Japanese I**

Development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 3020, or permission of the School.

Three hours a week.

JAPA 4020 [0.5 credit]**Fourth-Year Japanese II**

Continuation of fourth-year Japanese. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Prerequisite(s): grade of C or higher in JAPA 4010, or permission of the School.

Three hours a week.

JAPA 4210 [0.5 credit]**Functional Contemporary Japanese I**

Further study of Japanese to reach a more advanced level, aimed at developing speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Prerequisite(s): grade of C or higher in JAPA 4020 or permission of the School.

Three hours a week.

JAPA 4220 [0.5 credit]**Functional Contemporary Japanese II**

Continuation of JAPA 4210. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Prerequisite(s): grade of C or higher in JAPA 4210 or permission of the School.

Three hours a week.

JAPA 4900 [1.0 credit]**Independent Study**

Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, a grade of C or higher in JAPA 4020 or equivalent, or permission of the School.

JAPA 4901 [0.5 credit]**Independent Study**

Research in a topic in Japanese language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Japanese, JAPA 4020 or equivalent, or permission of the School.

Journalism (JOUR)

Journalism (JOUR) Courses**JOUR 1001 [0.5 credit]****Foundations: Journalism in Context**

This course charts a history of the fourth estate in the West from the invention of the printing press to the ascendance of networked digital communication, focusing on the political, economic and technological contexts that have shaped the news media as institutions and industries.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

JOUR 1002 [0.5 credit]**Foundations: Practicing Journalism in a Diverse Society**

The course introduces students to the concepts, issues and challenges in the contemporary Canadian media environment that will shape their professional role as practicing journalists. It will also provide students with an initial opportunity to practice some basic journalistic skills.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 1000.

Prerequisite(s): for Journalism Honours students only.

Lectures and discussion three hours a week.

JOUR 1003 [0.5 credit]**Discovering Journalism: Traditional Tales to Tweets**

Journalism's evolution as community creator and guardian of democracy; its greatest scoops and worst misdeeds. From ancient news-sharing to 21st-century expression in blogs, tweets and investigative masterpieces, this course surveys ethical, political and economic contexts of journalism. Not open to Journalism majors.

Lecture three hours a week.

JOUR 1004 [0.5 credit]**Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Lecture two hours a week, discussion one hour a week.

JOUR 2003 [0.5 credit]**Delivering Journalism: Innovators v. Imposters**

Activists, imposters and innovators increasingly crowd in on traditional journalism's role of presenting reliable news and fair discussion. How is public awareness now shaped – and misshaped – and how must journalism reshape, update and defend its borders to serve communities better?.

Prerequisite(s): JOUR 1001, JOUR 1002, JOUR 1003, or permission of the School of Journalism and Communication.

Lecture and discussion three hours a week.

JOUR 2106 [0.5 credit]**The Documentary**

Examination of the work of individual film makers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered.

Also listed as FILM 2106.

Precludes additional credit for JOUR 2105, FILM 2105.

Prerequisite(s): FILM 1101 or FILM 1120, or second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

JOUR 2201 [1.0 credit]**Fundamentals of Reporting**

Introduction to the techniques journalists use to gather information quickly, accurately and ethically, and to present reports and features in clear, engaging ways. Newsroom exercises provide experience in reporting, writing, editing and using digital tools, including photography and social media.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.

Lectures, discussion and practicum six hours a week.

JOUR 2202 [0.5 credit]**Digital Journalism Toolkit**

An introduction to the digital tools and social media journalists use to gather, verify and present material to audiences. Lab exercises provide experience producing photographs, audio, and video for journalistic storytelling and the use of social media tools and platforms for reporting and publishing.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 1001 and JOUR 1002 and second year standing in the Bachelor of Journalism program.

Students must be enrolled in this course concurrently with JOUR 2201.

Lectures and lab three hours a week.

JOUR 2501 [0.5 credit]**Media Law**

A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as COMS 2501, MPAD 2501.

Precludes additional credit for COMM 2501 (no longer offered).

Prerequisite(s): JOUR 1001, JOUR 1002, COMS 1001, COMS 1002, or JOUR 1003 and enrollment in the Minor in News Media and Information, or enrollment in the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School of Journalism and Communication.

Lectures and discussion three hours a week.

JOUR 3105 [0.5 credit]**Questions of Documentary Practice**

Theoretical implications of documentary film and documentary television practice.

Also listed as FILM 3105.

Prerequisite(s): 1.0 credit in Film Studies at the 2000-level, or permission of the School.

JOUR 3207 [0.5 credit]**Audio Journalism**

In this workshop students will build on the principles and practices of audio journalism to produce stories and audio in various formats suitable for radio and digital publication.

Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs six hours a week.

JOUR 3208 [0.5 credit]**Video Journalism**

In this workshop students will build on the principles and practices of video journalism to produce stories and video in various formats suitable for television and digital publication. Note: JOUR 3207 and JOUR 3208 may not be taken in the same term.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs six hours a week.

JOUR 3225 [0.5 credit]**Reporting in Depth**

Long-form journalistic writing skills development; techniques for thorough investigation of timely public issues. Study of outstanding feature and investigative writing examples. Students will pursue their own reporting projects.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 3205 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and practicum three hours a week.

JOUR 3235 [0.5 credit]**Digital Journalism**

Further development of digital journalism skills. Students will produce journalism for online audiences using formats including written and spoken language, still and moving images.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 3205 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202, and JOUR 2501 with a grade of C or higher in each.

Lectures and labs three hours a week.

JOUR 3300 [0.5 credit]**Media Ethics in a Digital World**

Ethical issues related to production and dissemination of news and other forms of content as they relate to digital environments. Different approaches to ethical decision-making and their application in contemporary settings. Also listed as MPAD 3300.

Precludes additional credit for JOUR 3215 (no longer offered).

Prerequisite(s): JOUR 2201, JOUR 2202 and JOUR 2501 with a grade of C or higher in each, or JOUR 1003, JOUR 2003 and JOUR 2501 with a grade of C or higher in each and enrollment in the Minor in News Media and Information.

Lectures three hours a week.

JOUR 3400 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3401 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3402 [0.5 credit]**Selected Topic in Journalism**

Examination of a topic in journalism not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 3407 [0.5 credit]**Comparative Media Studies**

The comparative study of one or more media organizations and/or types of media content with reference to their operation, audiences, and impacts.

Also listed as COMS 3407.

Precludes additional credit for COMM 3407 (no longer offered).

Prerequisite(s): third-year standing in B.J. Hons. or permission of the School of Journalism and Communication.

Lectures three hours a week.

JOUR 4001 [0.5 credit]**Journalism Now - and Next**

Changes occurring in the media, in the public's relationship with the media and how journalists and news organizations respond. Practical issues and challenges in the professional life of a journalist.

Also listed as MPAD 4001.

Precludes additional credit for JOUR 4000 (no longer offered).

Prerequisite(s): fourth-year standing in the Bachelor of Journalism or in the Bachelor of Media Production and Design, or fourth-year standing and enrollment in the Minor in News Media and Information, or fourth-year standing in the Strategic Public Opinion stream of the Communication and Policy Studies specialization of the Bachelor of Public Affairs and Policy Management.

Lectures and discussion three hours a week.

JOUR 4003 [0.5 credit]**The Digital Hub: Advanced Multimedia**

A workshop designed to give students instruction in digital reporting and publishing as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3235 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5003, for which additional credit is precluded.

Workshops averaging eight hours a week.

JOUR 4004 [0.5 credit]**The Digital Hub: Advanced Audio**

A workshop designed to give students instruction in audio journalism as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4206 (no longer offered).

Prerequisite(s): JOUR 3207 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5004, for which additional credit is precluded.

Workshops averaging eight hours per week.

JOUR 4005 [0.5 credit]**The Digital Hub: Advanced Video**

A workshop designed to give students instruction in video journalism as they produce stories from across the city and beyond.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4207 (no longer offered).

Prerequisite(s): JOUR 3208 with a grade of C or higher and fourth-year standing in B.J. Hons.

Also offered at the graduate level, with different requirements, as JOUR 5005, for which additional credit is precluded.

Workshops averaging eight hours a week.

JOUR 4100 [0.5 credit]**Special Topic**

Examination of a topic in journalism not covered in depth in other courses. Seminar three hours a week.

Seminar three hours a week.

JOUR 4101 [0.5 credit]**Special Topic**

An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year.

Seminar three hours a week.

JOUR 4300 [0.5 credit]**Specialized Journalism: Special Topic**

Examination of a topic not covered in depth in other specialized journalism courses. Topics may vary from year to year. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.

Also listed as MPAD 4300.

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5300, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4301 [0.5 credit]**Specialized Journalism: Business and the Markets**

Core skills development for business journalism: reading financial documents, covering activities of corporations, functioning of stock and other markets, trade policy and the broader economy, focus on contemporary business news and local publicly-traded companies. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5301, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4302 [0.5 credit]**Specialized Journalism: Business and Canadian Society**

The intersection between business and public policy, from climate change to taxation, pensions, labour and corporate social responsibility. What business does and how the media covers it. Emphasis on explanatory/analytical reporting, production of a related data project as an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5302, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4303 [0.5 credit]**Specialized Journalism: Health and Science**

The culture of health science research and major trends; key challenges confronting researchers and health science journalists around the world. Emphasis on explanatory/analytical reporting, production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5303, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4304 [0.5 credit]**Specialized Journalism: Environment and Science**

Major trends and research culture in climate and environmental sciences, focusing on key global concerns. Issues facing researchers and journalists. Focus on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5304, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4305 [0.5 credit]**Specialized Journalism: Canada and the U.S.**

Exploration of the unique issues in Canada-U.S. relations, from diplomacy to trade. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5315, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4306 [0.5 credit]**Specialized Journalism: Canada and the World**

Diplomacy, war, terrorism, migration, the international economy, development and other issues of interest to journalists who want to write about Canada and international affairs. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Hons. or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5306, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4308 [0.5 credit]**Specialized Journalism: Sports and Sport Culture**

Workshop equipping students with the skills to move beyond the clichés of sports writing and live event coverage. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5308, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4309 [0.5 credit]**Specialized Journalism: Arts and Culture**

Students are introduced to arts and culture journalism, exploring issues and trends that are key to understanding and covering the arts and related cultural policy in Canada. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5309, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4310 [0.5 credit]**Specialized Journalism: Justice and the Law**

Areas of law that journalists may encounter along with a practical explanation of how law works. Students gain the language and tools needed to successfully analyze and write about legal issues. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5310, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4311 [0.5 credit]**Specialized Journalism: Justice and The Supreme Court**

Examination of the Supreme Court of Canada, and the role of journalists in covering it. Students attend hearings and gain insight into the court's role in the making and shaping of Canada. Emphasis on explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing in B.J. Honours or permission of the School.

Also offered at the graduate level, with different requirements, as JOUR 5311, for which additional credit is precluded.

Lectures, discussion and seminars three hours a week.

JOUR 4400 [0.5 credit]**Professional Skills: Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in B.J.

Honours or permission of the School.

Seminar three hours a week.

JOUR 4401 [0.5 credit]**Professional Skills: Data Storytelling**

Instruction in telling stories from data. Focus on searching for, analyzing and mapping data, turning numbers into powerful narratives.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4402 [0.5 credit]**Professional Skills: Longform Writing**

Instruction in longform story production. Focus on researching and writing, including the art and craft of writing for magazines.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4403 [0.5 credit]**Professional Skills: Strategic Communication**

Workshop pairing student teams with non-profit groups that are in need of strategic communication advice.

Instruction in planning and implementation.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4208 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Also offered at the graduate level, with different requirements, as JOUR 5508, for which additional credit is precluded.

Lecture and practicum three hours a week.

JOUR 4404 [0.5 credit]**Professional Skills: Freelancing for Media Professionals**

Workshop preparing students to compete in a market that values the skills and mindset of entrepreneurial media workers.

Includes: Experiential Learning Activity

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year standing.

Lecture and practicum three hours a week.

JOUR 4500 [0.5 credit]**Investigating Journalism: Special Topic**

Examination of a topic in journalism not covered in depth in other courses.

Also listed as MPAD 4500.

Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.

Seminar three hours a week.

JOUR 4501 [0.5 credit]**Investigating Journalism: Gender, Identity and Inequality**

How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis.

Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.

Includes: Experiential Learning Activity

Also listed as MPAD 4501.

Precludes additional credit for JOUR 4307 (no longer offered).

Prerequisite(s): third- or fourth-year standing in B.J. Honours or permission of the School.

Seminar three hours a week.

JOUR 4502 [0.5 credit]**Investigating Journalism: Journalism and Conflict**

For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.

Includes: Experiential Learning Activity

Also listed as MPAD 4502.

Prerequisite(s): fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4503 [0.5 credit]**Investigating Journalism: Journalism, Indigenous Peoples and Canada**

Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous peoples in the era of reconciliation.

Includes: Experiential Learning Activity

Also listed as MPAD 4503.

Prerequisite(s): third-or fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4504 [0.5 credit]**Investigating Journalism: The Media and International Development**

A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda?.

Includes: Experiential Learning Activity

Also listed as MPAD 4504.

Prerequisite(s): third-year standing in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information, or permission of the School of Journalism and Communication.

Seminar three hours a week.

JOUR 4505 [1.0 credit]**Investigating Journalism: The Power and Politics of Government**

In-depth exploration of Canada's government, public policy and politics; parliamentary debate and committee hearings. Explanatory/analytical reporting; production of an extended work of journalism.

Includes: Experiential Learning Activity

Precludes additional credit for JOUR 4201 (no longer offered).

Prerequisite(s): JOUR 3225 with a grade of C or higher and fourth-year B.J. Honours standing, or permission of the School.

Seminar three hours a week.

JOUR 4900 [1.0 credit]**Honours Tutorial**

Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism.

Prerequisite(s): fourth-year B.J. (Honours) standing.

JOUR 4999 [0.0 credit]**Science Communication Certificate Professional Development Workshop**

A one-day workshop providing practical skills development for becoming an effective science communicator. Topics for discussion will include defining the audience and framing of information, reviews of effective science communication, career opportunities for science communicators, and one-to-one analysis of participants writing skills. Graded SAT/UNS.

Includes: Experiential Learning Activity

Also listed as ISAP 4999.

Prerequisite(s): This course is restricted to students enrolled in the Certificate of Science Communication, and who have completed at least 2.0 credits towards the certificate, including one of COMS 2500 or ISAP 3003.

A one-day workshop

Korean (KORE)

Korean (KORE) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

KORE 1010 [0.5 credit]**First-Year Korean I**

For students with no knowledge of Korean. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for LANG 1010, when the language of instruction was Korean.

Four hours a week.

KORE 1020 [0.5 credit]**First-Year Korean II**

Continuation of first-year Korean. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for LANG 1020, when the language of instruction was Korean.

Prerequisite(s): grade of C or higher in KORE 1010, or in LANG 1010 (when the language of instruction was Korean), or permission of the School.

Four hours a week.

KORE 2010 [0.5 credit]**Second-Year Korean I**

Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for LANG 2010, when the language of instruction was Korean.

Prerequisite(s): grade of C or higher in KORE 1020, or in LANG 1020 (when the language of instruction was Korean), or permission of the School.

Four hours a week.

KORE 2020 [0.5 credit]**Second-Year Korean II**

Continuation of second-year Korean. Further study of Korean to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for LANG 2020, when the language of instruction was Korean.

Prerequisite(s): grade of C or higher in KORE 2010, or in LANG 2010 (when the language of instruction was Korean), or permission of the School.

Four hours a week.

KORE 3010 [0.5 credit]**Third-Year Korean I**

Continuation of the study of Korean to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for LING 3009 (when the language of instruction was Korean).

Prerequisite(s): grade of C or higher in KORE 2020 or LANG 2020 (if taken in winter 2017), or permission of the School.

Seminar three hours a week.

KORE 3020 [0.5 credit]**Third-Year Korean II**

Continuation of third-year Korean. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for LING 3009 (when the language of instruction was Korean).

Prerequisite(s): grade of C or higher in KORE 3010, or permission of the School.

Seminar three hours a week.

KORE 4010 [0.5 credit]**Fourth-Year Korean I**

Development of speaking and writing abilities more complex than those used in daily communication.

Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in KORE 3020, or permission of the School.

Seminar three hours a week.

KORE 4020 [0.5 credit]**Fourth-Year Korean II**

Continuation of Fourth-Year Korean. Further development of speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes and in specific contexts such as the academic, business and technical domains. Compulsory attendance.

Prerequisite(s): grade of C or higher in KORE 4010, or permission of the School.

Seminar three hours a week.

Language Studies (LANG)

Language Studies (LANG) Courses

Placement for Language Students

Note: a placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

LANG 1010 [0.5 credit]**Introduction to a Language I**

Introductory study of a selected language. Oral skills; basic reading and writing skills. The language taught will vary from year to year. Compulsory attendance.

Precludes additional credit for LANG 1110 (when offered in the same language).

Seminars four hours a week.

LANG 1020 [0.5 credit]**Introduction to a Language II**

Continuation of LANG 1010. Oral skills; basic reading and writing skills. Compulsory attendance.

Precludes additional credit for LANG 1110 (when offered in the same language).

Prerequisite(s): grade of C or higher in LANG 1010, or permission of the School.

Seminars four hours a week.

LANG 1110 [1.0 credit]**Intensive Introduction to a Language**

Introductory study of a selected language. Oral skills; basic reading and writing skills. The language taught will vary from year to year. Compulsory attendance.

Precludes additional credit for LANG 1010 and LANG 1020, when taken in the same language.

Seminar eight hours a week (one term).

LANG 2010 [0.5 credit]**Second-Year Language I**

Further study of a selected language to reach a more advanced level of proficiency in a range of situations.

Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for LANG 2110, when taken in the same language.

Prerequisite(s): grade of C or higher in LANG 1020 or LANG 1110, or permission of the School.

Four hours a week.

LANG 2020 [0.5 credit]**Second-Year Language II**

Continuation of second-year of a selected language.

Further study of this language to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for LANG 2110, when taken in the same language, and LANG 2900.

Prerequisite(s): grade of C or higher in LANG 2010 or permission of the School.

Four hours a week.

LANG 2110 [1.0 credit]**Continuing Intensive Study of a Language**

Further study of a selected language to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. The language taught will vary from year to year. Compulsory attendance.

Precludes additional credit for LANG 2900, LANG 2010 and LANG 2020 (when offered in the same language).

Prerequisite(s): grade of C or higher in LANG 1020 or LANG 1110, or permission of the School.

Seminars eight hours a week (one term).

LANG 2900 [1.0 credit]**Supervised Autonomous Language Learning**

Supervised autonomous language learning in a language for which second-year instruction is not available.

Guidance in compiling a language portfolio (oral and written skills) to document competence equivalent to completion of the 2020 level. Setting learning objectives, selecting materials, developing methods, strategies and learning tools.

Precludes additional credit for LANG 2020, LANG 2110.

Prerequisite(s): grade of C or higher in LANG 1020 or LANG 1110, and permission of the School.

Latin (LATN)

Latin (LATN) Courses**LATN 1005 [0.5 credit]****Introduction to Latin I**

A course for beginners in Latin, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Latin.

Includes: Experiential Learning Activity

Lectures and practice periods four hours a week.

LATN 1006 [0.5 credit]**Introduction to Latin II**

A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.

Includes: Experiential Learning Activity

Prerequisite(s): LATN 1005 or equivalent.

Lectures and practice periods four hours a week.

LATN 2200 [0.5 credit]**Intermediate Latin I**

Further study of the language; introduction to the reading of Latin authors.

Includes: Experiential Learning Activity

Precludes additional credit for LATN 2001.

Prerequisite(s): LATN 1006 or equivalent.

Tutorials three hours a week.

LATN 2201 [0.5 credit]**Intermediate Latin II**

Continued study of the language; reading of selected prose and poetry by Latin authors; development of translation skills.

Precludes additional credit for LATN 2001.

Prerequisite(s): LATN 2200 or equivalent.

Tutorials three hours a week.

LATN 3900 [0.5 credit]**Advanced Latin I**

Reading and critical discussion of selections from Latin poetry.

Prerequisite(s): LATN 2200, LATN 2201 or equivalent.

Tutorials three hours a week.

LATN 3901 [0.5 credit]**Advanced Latin II**

Reading and critical discussion of selections from Latin prose.

Prerequisite(s): LATN 2200, LATN 2201 or equivalent.

Tutorials three hours a week.

LATN 4900 [0.5 credit]**Directed Study****LATN 4901 [0.5 credit]****Directed Study**

Latin American and Caribbean Studies (LACS)

Latin American and Caribbean Studies (LACS) Courses**LACS 1001 [0.5 credit]****Introduction to Latin American and Caribbean Studies I**

An interdisciplinary introduction to the history, culture, societies, and literatures of the region. Students will get a broad overview of the region and will be introduced to the disciplines used to study these societies.

Lectures/groups three hours per week.

LACS 1002 [0.5 credit]**Introduction to Latin American and Caribbean Studies II**

An interdisciplinary introduction to the major political, economic, environmental, and geographical issues confronting the region.

Lectures/groups three hours per week.

LACS 4001 [0.5 credit]**Issues in Latin American and Caribbean Studies**

An examination of the major issues confronting Latin America and the Caribbean including democratization, economic integration, indigenous and women's movements, human rights, social justice, and political change.

Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.

Seminar three hours per week.

LACS 4819 [0.5 credit]**Latin America and the World**

Latin America's changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.

Also listed as PSCI 4819.

Prerequisite(s): fourth-year standing or permission from Latin American and Caribbean Studies.

Seminar three hours a week.

Law (LAWS)

Law (LAWS) Courses

Note: some graduate courses may also be open to interested fourth-year students with permission of the Department.

LAWS 1001 [0.5 credit]**Introduction to Legal Studies 1**

Introduction to legal studies: concepts, sources, nature and functions of law; historical, cultural and constitutional foundations of Canadian legal system; common and civil law traditions; statutory interpretation; precedent; legal institutions; frameworks for analyzing formal and informal conceptions of law and its role in society.

Precludes additional credit for LAWS 1000 (no longer offered).

Lectures and discussion three hours a week.

LAWS 1002 [0.5 credit]**Introduction to Legal Studies 2**

Introduction to legal rules and theoretical approaches for critically understanding the creation, interpretation and enforcement of those rules; the role of judges, juries, lawyers, and lay persons; adjudication and alternative dispute resolution; relationship of law with social change and justice; challenges of access to justice.

Precludes additional credit for LAWS 1000 (no longer offered).

Lectures and discussion three hours a week.

LAWS 2105 [0.5 credit]**Social Justice and Human Rights**

Theories and practices of law and social justice. Issues examined may include: civil democracy and repression; global governance and the rule of law; democratic movements and social power; human rights instruments, regimes and remedies; armed conflict; and humanitarian intervention.

Prerequisite(s): 1.0 credit from LAWS 1001, LAWS 1002, or HUMR 1001 [1.0], or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2201 [0.5 credit]**Persons and Property**

Origins and scope of the concept of person in law and how concepts of legal personality change over time. Origins and scope of the concept of property and how concepts of property change over time.

Precludes additional credit for LAWS 2003 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2202 [0.5 credit]**Obligations**

The concepts employed by the law for creating and enforcing legal obligations between persons within society, including contract, tort, fiduciary obligation and restitution. Consideration is given to the role of persons and the role of the state in ordering private legal obligations.

Precludes additional credit for LAWS 2003 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2301 [0.5 credit]**Criminal Justice System**

The institutional and social production of criminal law in Canada. Processes, personnel, and agencies in the criminal legal system. The role of discretion and mechanisms of accountability. The accused and the place of the victim. Issues and problems in sentencing and punishment.

Precludes additional credit for LAWS 2004 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2302 [0.5 credit]**Criminal Law**

The legal and social dimensions of criminal liability and responsibility in Canada, including issues and problems surrounding mens rea, actus reus, and the attachment of liability. Excuses and justifications, the Canadian Criminal Code and the role of the Charter in the criminal legal system.

Precludes additional credit for LAWS 2004 (no longer offered).

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures three hours a week.

LAWS 2501 [0.5 credit]**Law, State and Constitution**

Law relating to the state, society and the constitution, with a focus on the historical framework, federalism, and constitutional reform in Canada.

Precludes additional credit for LAWS 2005 (no longer offered).

Prerequisite(s): 1.0 credit from LAWS 1001 and LAWS 1002 or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2502 [0.5 credit]**Law, State and Citizen**

Law relating to the state and its relationship to individuals and groups in society, with a focus on the administrative process, basic values and the Charter.

Precludes additional credit for LAWS 2005 (no longer offered).

Prerequisite(s): 1.0 credit from LAWS 1001 and LAWS 1002 or PAPM 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2601 [0.5 credit]**Public International Law**

Examination of the role of law in contemporary international relations. Nature, history and sources of international law; international personality of states; status of international organizations and individuals; creation and effect of international obligations; importance and functions of law in the settlement of international disputes. Precludes additional credit for LAWS 3603 (no longer offered).

Prerequisite(s): 1.0 credit from LAWS 1001 and LAWS 1002 or PAPM 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 2908 [0.5 credit]**Methodological Approaches in Legal Studies 1**

Introduction to the legal research process and analysis of legal methodology; finding and analyzing primary and secondary legal sources. Students are strongly encouraged to take this course in the second year of their program.

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 1001 and LAWS 1002.

Lectures and tutorials three hours a week.

LAWS 3001 [0.5 credit]**Women and the Legal Process**

How the legal process has affected the status of women. Areas of concentration within the Canadian context include the criminal law, citizenship and immigration, education, employment, and welfare and social services.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3003 [0.5 credit]**Contracts**

The enforcement of promises and agreements; basic doctrines and underlying principles of the law of contract are studied from formation of the contract to remedies for breach of contract; role of contract for economic and social purposes is also considered.

Prerequisite(s): LAWS 2202 and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3005 [0.5 credit]**Law and Regulation**

Definitions and goals of regulation; contemporary theories and debates about legal and non-legal approaches to regulation. Approaches studied may include market mechanisms, public agency regulation, self-regulation and governance in co-operation with associations in civil society.

Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502.

Lectures three hours a week.

LAWS 3006 [0.5 credit]**Mediation**

Theory and practice of mediation; historical roots and influences; contrasts with formal litigation and other dispute resolution processes; issues of social and legal control; critiques, including feminist, Marxist and critical race theory; issues of power, gender, race and class; application to contemporary issues and disputes.

Prerequisite(s): (LAWS 1001 and LAWS 1002) and (1.0 credit in LAWS at the 2000 level or 0.5 credit in LAWS at the 2000 level and BUSI 2601).

Lectures three hours a week.

LAWS 3101 [0.5 credit]**Philosophy of Law: The Nature of Law**

The concept of law, leading theories of law and related concepts such as rules and obligations, power and authority, coercion, and justice.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3102 [0.5 credit]**Philosophy of Law: The Logic of the Law**

Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession.

Also listed as PHIL 3102.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3103 [0.5 credit]**Law, Culture, and the Humanities: A Foundation**

Themes, approaches and debates in the field of law, culture and the humanities. Primary materials considered may include theoretical writings/cultural criticism/literary texts/films/video/photography and music. These texts present different modes and means of inquiring into the assumptions and aspirations that we ascribe to law.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3104 [0.5 credit]**Critical Theory for Legal Studies: An Introduction**

Introduction to the general contours of critical theory as it pertains to law and legal studies. The course will introduce key concepts and controversies in the field, identify specific theoretical debates, and consider what conceptual consequences follow from the elaboration of specific positions or arguments.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3105 [0.5 credit]**Theory of Law and Politics**

Theories of law and politics; prominent thinkers and schools of thought; influence on legal and political institutions. Topics include law and ethics, justice and equity, positivism and natural law, state absolutism, codifications, and anthropological and historical theories of law and society.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level, or 0.5 credit in LAWS at the 2000 level and PSCI 1100.

Lectures three hours a week.

LAWS 3106 [0.5 credit]**Law and Social Regulation**

A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict.

Also listed as SOCI 3480.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3201 [0.5 credit]**Business Enterprise Frameworks**

Forms of carrying on business activity: proprietorships, partnerships, corporations and Crown entities. The rights and obligations of such business enterprises both internally and in relation with other persons. The relationship between legal form and economic function. The role of state intervention.

Prerequisite(s): LAWS 2201 and LAWS 2202.

Lectures three hours a week.

LAWS 3202 [0.5 credit]**Intellectual Property**

Critical assessment of copyright, patents, trademarks, trade secrets and other forms of intellectual property; regulation and governance of information technology including self-regulation, standard setting, licensing, competition policy and international dimensions.

Prerequisite(s): 1.0 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502.

Lectures three hours a week.

LAWS 3203 [0.5 credit]**The Legal Nature of Property**

An examination of the nature and functions of property as a legal and social institution, with particular reference to theories of property, the scope of property interests, and the relationship between individual property rights and the state.

Prerequisite(s): LAWS 2201 and LAWS 2202.

Lectures three hours a week.

LAWS 3205 [0.5 credit]**Consumer Law**

Need for consumer protection in the provision of goods and services; traditional legal protection by statute and common law; legislative responses to consumer pressures; judicial response in recent Canadian, English and American law; reform of consumer law.

Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3206 [0.5 credit]**Banking Law**

The law relating to banks and banking; the nature of the legal relationship created; legal rights and duties of the parties involved. Consumer and corporate aspects of banking (including computerization and electronic funds transfers); regulations of banking.

Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3207 [0.5 credit]**International Transactions**

Topics may include: the international sale of goods, finance of transnational transactions, international carriage of goods, insurance, agency and trading houses; other forms of trade, e.g., counter-trade, foreign investment; settlement of international disputes by litigation and arbitration.

Prerequisite(s): (LAWS 2202 or BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3208 [0.5 credit]**International Trade Regulation**

International regulation of trade and investment through bilateral, regional and multilateral treaties and agreements. Topics may include: WTO, NAFTA, the EU, UNCTAD, intergovernmental commodity agreements, dispute settlement.

Prerequisite(s): (0.5 credit from LAWS 2202, LAWS 2501, LAWS 2601, BUSI 2601) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3209 [0.5 credit]**Canadian Correctional Policies in Historical Perspective**

History of corrections in Canada in the context of the international evolution of western penal systems, Canadian corrections in the twentieth century and expansion of alternatives to prison after WWII; criminological debates about the theoretical and empirical significance of historical milestones in corrections. Prerequisite(s): LAWS 2301 and LAWS 2302. Lectures three hours a week.

LAWS 3303 [0.5 credit]**Torts**

Principles of legal liability for harm caused to the person or property of others; examination of policy rationales justifying and limiting liability; responsiveness to changing social values and conditions. Particular focus on negligence law; may also consider nuisance, intentional torts and other topics. Prerequisite(s): LAWS 2201 and LAWS 2202. Lectures three hours a week.

LAWS 3305 [0.5 credit]**Crime and State in History**

The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada. Also listed as HIST 3305. Prerequisite(s): 1.0 credit in LAWS at the 2000 level, or 0.5 credit in LAWS at the 2000 level and 0.5 credit in HIST at the 2000 level. Lectures three hours a week.

LAWS 3306 [0.5 credit]**Crime, Law, Process and Politics**

Criminal law process in Canada; structure and use of the process examined for fairness, defects, and possible reform initiatives. Issues concerning gender, race and class bias in the implementation and application of the criminal law. Prerequisite(s): LAWS 2301 and LAWS 2302. Lectures three hours a week.

LAWS 3307 [0.5 credit]**Youth and Criminal Law**

A review of the Youth Criminal Justice Act within the framework of the Canadian justice system, with particular emphasis on historical and philosophical developments and objectives. Current topics include: constitutional issues, procedure, confessions, transfers, sentencing options, alternative measures, reviews, and possible amendments. Prerequisite(s): LAWS 2301 and LAWS 2302. Lectures three hours a week.

LAWS 3308 [0.5 credit]**Punishment and the Law**

This course explores justifications and practices of punishment and social control from a socio-legal perspective. Rationalizations and justifications for punishment are considered. Different forms of punishment and control within the law will be examined as well as different theoretical perspectives of punishment. Prerequisite(s): LAWS 2301 and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3401 [0.5 credit]**Employment Law**

Legal regulation of the employment relationship; its contractual basis; defining employment; rights and duties of employees and employers; termination of employment; statutory regulation through employment standards legislation, human rights codes, workers' compensation acts, occupational health and safety and related statutes. Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3405 [0.5 credit]**Labour Law**

Role of law in industrial relations; effect of law on collective bargaining relationships; recognition of bargaining agent; regulation of bargaining; administration of the collective agreement; methods of conflict resolution. Prerequisite(s): (0.5 credit from LAWS 2201, LAWS 2202, LAWS 2501, LAWS 2502, BUSI 2601) and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3500 [0.5 credit]**Constitutional Law**

An investigation of the Canadian constitution. Sovereignty, the nature and units of executive, legislative, and judicial power in Canada as interpreted by the courts. The distribution of powers under the Canadian constitution, including an investigation of contemporary problems of federalism. Problems of judicial review. Prerequisite(s): (LAWS 2501 or PSCI 2003) and 0.5 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3501 [0.5 credit]**Law in the Information Society**

Legal responses to challenges of the information society. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, control of objectionable content, Charter and human rights issues, and security. Prerequisite(s): 1.0 credit in LAWS at the 2000 level. Lectures three hours a week.

LAWS 3502 [0.5 credit]**Regulating Freedom of Expression in Canada**

The claimed relationship between freedom of expression and Canadian democracy, including the historical development of the right and various limits on it, and the regulatory structures governing contemporary media, criminalized and commercial expression, and use of media in the courtroom.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3503 [0.5 credit]**Equality and Discrimination**

Human rights issues and law in Canada; history and present day experiences of discrimination; critical exploration of laws effectiveness in responding to discrimination; meaning(s) of equality and discrimination; focus on Human Rights Codes - interpretation, administration, enforcement with some reference to s.15 of the Charter.

Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3504 [0.5 credit]**Law and Aboriginal Peoples**

The legal situation of aboriginal peoples in Canada. Topics include status, aboriginal rights, treaties, legislative jurisdiction and the constitutional framework, aboriginal claims, and self-government. Comparative references to aboriginal policy in other countries.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3506 [0.5 credit]**Administrative Law**

Structure and procedure of Canadian administrative authorities; policy, statutory and judicial environments in which they operate. Topics include techniques for implementing public policy and structuring public authorities; statutory interpretation; procedural safeguards; exercise of statutory discretion; reconciling efficiency and fairness.

Prerequisite(s): LAWS 2502 and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3508 [0.5 credit]**Health Law**

Legal/ethical issues in health care regulation. Topics may include: regulation of health professions; economics of health care; informed consent/choice; regulation of drugs, devices and research; medical malpractice and other liability; mental health issues; patient/client records.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3509 [0.5 credit]**The Charter of Rights Topics**

Selected issues in the Canadian Charter of Rights and Freedoms. The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): (0.5 Credit from LAWS 2105, LAWS 2201, LAWS 2302, LAWS 2502) and 0.5 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3602 [0.5 credit]**International Human Rights**

The developing international law relating to the protection of human rights. General concepts, rules and institutions. Specific issues include self-determination, aboriginal rights, the refugee problem, and torture. The inherent problems and overall potential of international law.

Precludes additional credit for LAWS 4604 (no longer offered).

Prerequisite(s): (0.5 credit from LAWS 2105, LAWS 2502, LAWS 2601 or HUMR 2001) and 0.5 credit in LAWS at the 2000 level or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 3604 [0.5 credit]**International Organizations**

Nature, character, legal status and jurisdiction of intergovernmental international organizations. Rights and duties of states arising from membership in international organizations. Distinction between international and supra-national institutions. United Nations system, selected subsidiary organs, and specialized agencies; non-governmental organizations at times of crisis.

Prerequisite(s): LAWS 2601 and 0.5 credit in LAWS at the 2000 level or PAMP 1001 and PSCI 2003.

Lectures three hours a week.

LAWS 3800 [0.5 credit]**Law of Environmental Quality**

Various aspects of environmental law; pollution control, legal actions and remedies; legal foundations for participation in decision-making processes. Social, economic and political forces influencing the formulation and implementation of environmental law. Alternative forms of regulation that may articulate different demands.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3804 [0.5 credit]**Law of the Family**

Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.

Also listed as SOWK 3804.

Prerequisite(s): LAWS 2201 and LAWS 2202.

Lectures three hours a week.

LAWS 3903 [0.5 credit]**Selected Legal Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): 1.0 credit in LAWS at the 2000 level.

Lectures three hours a week.

LAWS 3904 [0.5 credit]**Selected Legal Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite(s): 1.0 credit in LAWS at the 2000-level.

Lectures three hours a week.

LAWS 3908 [0.5 credit]**Methodological Approaches in Legal Studies 2**

Advanced approaches to interdisciplinary research and analysis in law and legal studies. Methodological approaches considered will vary by section, and may include theoretical, quantitative, qualitative, literary, or historical approaches.

Prerequisite(s): LAWS 2908 and third-year Honours standing. Honours students are strongly encouraged to take this course in the third year of their program.

Lectures three hours a week.

LAWS 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

Prerequisite(s): registration in the B.A. Honours (concentration in Business Law or concentration in Law, Policy and Government) Cooperative Program, completion of Co-op preparation classes offered by the Co-op office and permission of the Department.

LAWS 4001 [0.5 credit]**Law, Family and Gender**

Relationship between family law and ideology of the family, gender roles and the reproduction of family structures. Social ramifications of family law; potential for family law reform as an agency of social change.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3001 or LAWS 3804, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4002 [0.5 credit]**Feminist Theories of Law**

The literature comprising feminist perspectives on law; theoretical bases of these perspectives; place of feminist theories within other critiques of law; significance of different feminist theories for equality theory and law reform strategies; unique contributions of the various perspectives.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4006 [0.5 credit]**Religion and State in Canada**

Legal nature of the interaction of religion and state within an historical framework. Emphasis on Canada after the Charter of Rights and Freedoms and on religious pluralism and resistance to state intervention in religion. Interdisciplinary readings drawn from legal, historical and theological sources.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4100 [0.5 credit]**Modern Legal Theory**

Realist and post-realist legal scholarship; emphasis on Canadian, American and British approaches. Topics include the Canadian treatise tradition, American legal realism, empirical approaches to legal problems, the sociological movement in law, critical and Canadian feminist legal scholarship, Marxian theories of law, normative economic theory.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4101 [0.5 credit]**Contemporary Justice Theories**

Selected major contemporary theories of justice such as those associated with Rawls, Walzer, and Habermas, with emphasis on both their procedural and substantive elements and their concrete ramifications for law, policy and political practice.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4102 [0.5 credit]**Controversies in Rights Theory**

This course examines selected controversies in rights theories, practices, and/or historiography. Illustrative questions may include: Are rights universal or culturally relative? Can rights be justified after the demise of natural rights philosophy? Do rights undermine difference? Do communities benefit from a rights-based culture?.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4103 [0.5 credit]**Special Topic in the Philosophy of Law**

Detailed study of a special topic in philosophy of law. Also listed as PHIL 4407.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4104 [0.5 credit]**Special Topic in the Philosophy of Law**

Detailed study of a special topic in philosophy of law.

Also listed as PHIL 4408.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4105 [0.5 credit]**Global Justice Theory**

Selected theories of global justice as they pertain to legality, which may include questions such as the justice of military force and just war theory, global social justice and global inequality, sovereignty and cosmopolitan conceptions of justice, demands for global democracy and human rights.

Prerequisite(s): LAWS 2105, LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4106 [0.5 credit]**Law and Violence**

Examination of how law defines, justifies, and addresses individual, collective and state violence: contemporary and historical case studies; theoretical inquiries into the relationship between law, legality and different forms of violence.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4107 [0.5 credit]**Law in Modern Society**

Sociological and legal theory accounts of the changing role and function of law in modern society with particular reference to advanced capitalist societies. Topics include: the welfare state and the use of regulatory law; juridification and legalization; counter-trends, deregulation, informalism, legal pluralism.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4200 [0.5 credit]**International Economic Law**

Selected topics in international economic law. May include: the legal regulation of international economic activity; methods of dispute settlement; standardization and development of an autonomous international trade law; and selected conventions and institutions governing international economic law.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3207 or LAWS 3208, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4202 [0.5 credit]**Accountability of Management**

Role, function, and legal regulation of persons managing business enterprises. Status, social responsibility, fiduciary obligations and rights. Control and accountability of managers, obligations owed to the enterprise unit itself, constitutional rights of members, standards imposed by statutory regulation.

Prerequisite(s): LAWS 2908, LAWS 3201 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4204 [0.5 credit]**Legal Issues in eCommerce**

An examination of selected legal topics relevant to the conduct of electronic commerce. Topics include types of regulation, government support, jurisdiction challenges, contract disputes and consumer protection. Court and alternative dispute resolution policy of Domain Names challenges are also included.

Prerequisite(s): LAWS 2908, LAWS 2201, LAWS 2202 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4209 [0.5 credit]**Topics in Business Law**

Examination of a selected advanced topic in business law. The topics of this course may vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 2201 or LAWS 2202, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4302 [0.5 credit]**Regulation of Corporate Crime**

Legal, policy and theoretical perspectives on the regulation of corporate crime. Nature and causes of corporate crime. Selected case studies on the role of the state in regulating corporate behaviour. Failure of the criminal justice system to respond to corporate crime.

Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4303 [0.5 credit]**Drugs, The User and The State**

This course explores the state's attempts to control drugs and drug users by exploring different aspects of national and international drug control. The Canadian experience of drug control, viewed from different perspectives, will be explored within a broader socio-legal context.

Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4304 [0.5 credit]**Policing and Social Surveillance**

Theoretical consideration of the emergence and transformation of “policing” activities through an examination of law and changes in social relations, with special attention to the myriad agencies involved in contemporary security provision. Evolving notions of risk, surveillance, the state, and the private-public dichotomy. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002, and 0.5 credit from LAWS 2301 or LAWS 2302, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4305 [0.5 credit]**Criminal Justice Reform**

Social transformation and criminal justice reform. Theoretical and practical reasons for the use of criminal law as an instrument of social control. Specific reform initiatives and processes. Alternate responses to social problems. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4306 [0.5 credit]**Criminal Law Issues**

Selected issues and problems in the area of criminal law. The topics may vary from year to year depending on demand and interest and are announced in advance of registration. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4307 [0.5 credit]**Medical Criminal Law Issues**

Legal-medical issues, conflicts and relationships in the field of social control. Topics include mental disorder and criminal liability, diversion of offenders to civil commitment in hospital, insanity, automatism, fitness to stand trial, prediction of dangerousness, regulation of psychoactive drugs. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4308 [0.5 credit]**Sentencing**

Theories of sentencing, current sentencing laws and practices, perceptions of sentencing. Data on sentencing practice across Canada. Reforms in other jurisdictions. Critical review of the Canadian Sentencing Commission. Multidisciplinary approach using research and theory in law, criminology, social psychology and sociology. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4309 [0.5 credit]**State Security and Dissent**

Historical and contemporary analysis of legal responses of Canadian governments to dissent, political opposition, insurrection, etc. Includes trial of political offences (treason, sedition, riot), national security measures (War Measures/Emergencies Act, Official Secrets Act), and other special powers (police, labour, immigration, parliamentary privilege, etc.). Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and 0.5 credit from LAWS 3305, LAWS 3503, LAWS 3509, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4311 [0.5 credit]**Human Rights in Canadian Prisons**

Correctional law in the Canadian criminal justice system; competing objectives of punishment and rehabilitation in the context of respect for the rule of law and human rights; protection of human rights of prisoners in Canada and in international and comparative contexts. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4402 [0.5 credit]**Employment Dispute Resolution**

Theory and practice of dispute resolution in employment relations; analysis of such techniques as negotiation, grievance and interest arbitration, mediation, investigation and litigation applied to a range of employment disputes such as collective agreements, termination of employment, discrimination, harassment, occupational health and safety. Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3006, LAWS 3401, LAWS 3405, and fourth-year Honours standing. Seminars three hours a week.

LAWS 4503 [0.5 credit]**Law, Disability and Society**

Exploration of the ways in which law promotes or hinders the inclusion of disabled persons in society. Consideration of different theories of 'disability' and the creation of barriers faced by disabled persons. Topics may include barriers affecting education, employment, transportation, benefits, and life/death decisions. Prerequisite(s): LAWS 2908 and fourth-year Honours standing. Seminars three hours a week.

LAWS 4504 [0.5 credit]**Indigenous Criminal Justice**

Indigenous peoples and the administration of Canadian criminal justice including policing, courts, corrections and aftercare. Content and effects of past and present policies, processes and laws. Alternatives such as self-government and self-determination; potential approaches to an appropriate justice system for Indigenous peoples. Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4507 [0.5 credit]**Administrative Law and Control**

Examination of characteristics and selected problems of control of administrative action. Topics include: varieties of traditional and constitutional, legal and judicial control, impact of the Charter, reforms to administrative law control systems in Canada, and comparisons with developments outside Canada.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3005 or LAWS 3506, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4510 [0.5 credit]**Topics in Law, Policy and Government**

Examination of a selected advanced topic in the area of law, policy and government. The topics of this course may vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2501, LAWS 2502, LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4601 [0.5 credit]**Transnational Law and Human Rights**

Examination of the role of law in addressing human rights issues that transcend traditional categories of domestic and international law; the potential and limits of law in addressing human rights issues; the growth of transnational approaches to law and human rights.

Prerequisite(s): LAWS 2908, 0.5 credit from LAWS 3503 or LAWS 3602, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4602 [0.5 credit]**Is Religious Freedom a Human Right?**

Legal, theoretical, and theological interconnections between religion and human rights. Evaluation of concepts including religious freedom, secularism, public sphere, accommodation and neutrality. Examination of religion and culture, interdependence of legal and religious perspectives, boundaries of religion and state, and religious compulsion. Use of case studies.

Also listed as HUMR 4602, RELI 4602.

Prerequisite(s): LAWS 2908, LAWS 3602, and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4603 [0.5 credit]**Transitional Justice**

Legal and ethical responses to human rights violations in the transition to democracy. Dilemmas of the rule of law; truth and reconciliation; prosecution and punishment; amnesty; retribution and revenge; restorative justice; administrative remedy; reparations; International case studies. Theoretical arguments about justice in context of country.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4605 [0.5 credit]**Topics in International Law**

Topics vary from year to year and are announced in advance. May include transnational environmental issues; the international law of armed conflict, peacekeeping and neutrality; the law of international treaties and transnational agreements; state responsibility under international law.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4606 [0.5 credit]**International Law of Armed Conflict**

UN Charter prohibition of the use of force. Exceptional, permissible uses of armed force. Role of Security Council in determining legality of armed intervention. Collective security, peacemaking, peacekeeping, neutrality, prohibited means of warfare. Humanitarian International Law, Geneva Red Cross Conventions, war crimes, International Criminal Court.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4607 [0.5 credit]**Immigration and Refugee Law**

Immigrants and refugees; demographics; Canadian, international and human rights law and policy. The Canadian Immigration Act. Legal and social problems including entry and removal, family reunion, citizenship, remedies, the rights of clandestine migrants; settlement rights; non-discrimination; asylum; a nation's right to determine membership.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2502 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4610 [0.5 credit]**Special Topics in Transnational Law and Human Rights**

Examination of a selected advanced topic in the area of transnational law and human rights. The topics of this course may vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908 or PAPM 3000, LAWS 2601 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4701 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the Department of Law.

Also listed as SOWK 4701.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4702 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced.

Also listed as SOWK 4702 and SOCI 4702.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4703 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the School of Social Work.

Also listed as SOWK 4703.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4800 [0.5 credit]**Environment and Social Justice**

The potential of environmental law to protect the environment and people while promoting opportunities for informed participation in environmental decision making by groups traditionally excluded from these processes; contemporary issues of social justice raised by legal regulation of the environment.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4801 [0.5 credit]**Risk and the Legal Process**

Application of risk assessment and management in various legal arenas including insurance, liability and tort, litigation management, environmental protection, and sentencing and parole.

Prerequisite(s): LAWS 2908 or PAPM 3000 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4802 [0.5 credit]**Criminal Jury Trials**

Critical analysis of the criminal jury system including its history and context, the role of the judge, jury dynamics and jury composition. Perspectives and roles of the accused, victims, police, defence counsel, Crown attorney, judges, juries, media, politicians and the public.

Prerequisite(s): LAWS 2908, CRCJ 3001, or CRCJ 3002 and LAWS 2301, LAWS 2302 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4901 [0.5 credit]**Tutorial in Law**

Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department).

Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor. Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4902 [0.5 credit]**Tutorial in Law**

Tutorials or reading courses conducted under the supervision of a faculty member of the Department of Law on a selected topic in which advanced courses are not available (guidelines are posted by the Department).

Prerequisite(s): LAWS 3908, fourth-year Honours standing, written acceptance by a faculty member and permission of the Undergraduate Supervisor. Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

LAWS 4903 [0.5 credit]**Advanced Legal Topics**

The topics of this course vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4904 [0.5 credit]**Advanced Legal Topics**

The topics of this course vary from year to year and are announced in advance of registration.

Prerequisite(s): LAWS 2908 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4905 [1.0 credit]**Full-Year Service Learning Placement**

This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department).

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization. Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.

LAWS 4906 [0.5 credit]**Service Learning Placement**

This course gives students the opportunity to work with an organization whose focus relates to law. Participating students must identify a host organization and a faculty member to provide supervision (guidelines are posted by the Department).

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 2908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher, written acceptance by a faculty member, permission of the Undergraduate Supervisor and the host organization. Work at placement site 7-10 hours per week. Regular weekly meetings with on-site supervisor or faculty supervisor.

LAWS 4908 [1.0 credit]**Honours Paper**

Students in the BA Honours Law program may write an Honours paper under the supervision of a faculty member of the Department of Law (guidelines are posted by the Department). Students intending to undertake graduate studies are encouraged to complete an Honours paper.

Includes: Experiential Learning Activity

Prerequisite(s): LAWS 3908, fourth-year Honours standing in Law with a Law GPA of 9.00 or higher and written acceptance by a faculty member.

Independent work 7-10 hours per week. Regular meetings with supervisor (bi-weekly).

Linguistics (LING)

Linguistics (LING) Courses**LING 1001 [0.5 credit]****Introduction to Linguistics I**

Nature of language and linguistic knowledge. Formal description and analysis of language: phonetics, phonology, morphology, syntax and semantics.

Lecture and tutorial three hours a week.

LING 1002 [0.5 credit]**Introduction to Linguistics II**

Survey of topics in linguistics: language change, sociolinguistics, language acquisition and processing. May include language typology, language contact and writing systems.

Prerequisite(s): LING 1001 (may be taken concurrently).

Lectures three hours a week.

LING 1100 [0.5 credit]**The Mysteries of Language**

This course explores some intriguing mysteries of language - whether it is unique to humans, how children master its complexities so easily, how the brain handles language, how languages are born and die. These questions lead us to interesting discoveries about the human mind.

Lectures three hours a week.

LING 2005 [0.5 credit]**Linguistic Analysis**

Phonological, morphological and syntactic analysis of linguistic data. Coursework consists primarily of practical exercises in data analysis.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001.

Lecture and tutorial three hours a week.

LING 2007 [0.5 credit]**Phonetics**

Description of speech sounds; transcription systems; articulation; acoustics of speech sounds; perception of speech sounds; cross-linguistic diversity and phonetic universals; the role of phonetics in grammar.

Includes: Experiential Learning Activity

Precludes additional credit for LING 2001 (no longer offered).

Prerequisite(s): LING 1001.

Lecture and tutorial three hours a week.

LING 2504 [0.5 credit]**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers.

Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity.

Also listed as PHIL 2504, COMS 2504.

Prerequisite(s): second-year standing.

Lectures three hours a week.

LING 2604 [0.5 credit]**Communication Differences and Disabilities I**

A survey course highlighting a variety of communication differences and disabilities. Specific topics vary from year to year but typically will include speech, language, fluency and hearing differences and disabilities.

Also listed as ALDS 2604.

Prerequisite(s): second year standing or permission of the instructor.

Lectures three hours a week.

LING 2802 [0.5 credit]**History of the English Language**

A historical study of the English language, its structure, variety, and cultural contexts, with an introduction to grammatical terminology and constructions.

Also listed as ENGL 2105.

Prerequisite(s): second-year standing or permission of the department.

Lectures three hours a week.

LING 3004 [0.5 credit]**Syntax I**

Introduction to syntactic theory. Representation and analysis of sentence structure, syntactic relations and syntactic dependencies. Testing of grammatical hypotheses.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005.

Lecture and tutorial three hours a week.

LING 3005 [0.5 credit]**Morphology I**

Introduction to word structure and morphological theory. Topics include inflectional and derivational morphology, morphological processes, and interaction of morphology with phonology and syntax.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005 and LING 2007.

Lectures three hours a week.

LING 3007 [0.5 credit]**Phonology I**

The sound-systems of languages, analysis of phonological structure; generative phonology; phonological rules and derivations; cross-linguistic diversity and universals; segmental phonology; stress; tone.

Includes: Experiential Learning Activity

Precludes additional credit for LING 3002 (no longer offered).

Prerequisite(s): LING 2001 (no longer offered) or LING 2007.

Lecture and tutorial three hours a week.

LING 3009 [0.5 credit]**Special Topic in Linguistics**

Selected topics in general linguistics not ordinarily treated in the regular course program. Contents of the course vary from year to year.

Lectures and discussion three hours per week.

LING 3504 [0.5 credit]**Pragmatics**

The study of language in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. May include cross-cultural pragmatics.

Also listed as PHIL 3504.

Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/COMS 2504/LING 2504 or PHIL 3506, or LING 3505 or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Lectures three hours a week.

LING 3505 [0.5 credit]**Semantics**

Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.

Also listed as PHIL 3506.

Prerequisite(s): third-year standing, and one of LING 1001, PHIL 2001, PHIL 2504/LING 2504/COMS 2504 or PHIL 3504/LING 3504, or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Lectures three hours a week.

LING 3601 [0.5 credit]**Language Processing and the Brain**

Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.

Includes: Experiential Learning Activity

Also listed as PSYC 3709.

Prerequisite(s): LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.

Lectures three hours a week.

LING 3603 [0.5 credit]**Child Language**

Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.

Includes: Experiential Learning Activity

Also listed as PSYC 3508.

Prerequisite(s): LING 1001 and second-year standing, or permission of the instructor.

Lectures three hours a week.

LING 3604 [0.5 credit]**Communication Differences and Disabilities II**

An in-depth examination of select topics in the field of communication differences and disabilities. An emphasis is placed on theoretical accounts of specific differences and disabilities and the cross-linguistic evidence for these accounts. Specific topics may vary from year to year.

Also listed as ALDS 3604.

Prerequisite(s): LING 1001 and one of ALDS or LING 2604.

Lectures three hours a week.

LING 3701 [0.5 credit]**Corpus Linguistics**

Computer-assisted analysis of electronic collections of naturally occurring language. Applications in such areas as language variation, grammar, lexicology, phraseology, translation, and learner language.

Includes: Experiential Learning Activity

Also listed as ALDS 3701.

Prerequisite(s): third-year standing in Applied Linguistics and Discourse Studies, or in Linguistics, or enrolment in the CTESL program, or permission of the instructor.

Lectures three hours a week.

LING 3702 [0.5 credit]**Sociolinguistics**

The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.

Also listed as ALDS 3202.

Precludes additional credit for ALDS 2701 (no longer offered).

Prerequisite(s): ALDS 1001 and third-year standing.

Lecture three hours a week.

LING 3801 [0.5 credit]**Structure of a Specific Language**

Description and analysis of the structure of a specific language applying phonology, morphology, syntax, and semantics. Language to be studied will be announced in advance by the School.

Prerequisite(s): LING 2001 (no longer offered) or LING 2005 or LING 2007.

Lectures three hours a week.

LING 3810 [0.5 credit]**Historical Linguistics I**

Language change; sound change; analogy; the comparative method; internal reconstruction; the philological method; historical linguistics and pre-history; language change and theories of grammar.

Precludes additional credit for LING 3101.

Prerequisite(s): LING 2007.

Lectures three hours a week.

LING 3811 [0.5 credit]**Language Typology and Universals**

Cross-linguistic survey of syntactic and morphological patterns found in the languages of the world. Typological classification and identification of language universals.

Includes: Experiential Learning Activity

Precludes additional credit for LING 3001.

Prerequisite(s): LING 2005.

Lectures three hours a week.

LING 3900 [1.0 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

LING 3901 [0.5 credit]**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

LING 4004 [0.5 credit]**Syntax II**

Advanced topics in syntax.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4002 (no longer offered).

Prerequisite(s): LING 3004 and third-year standing.

Seminars three hours a week.

LING 4005 [0.5 credit]**Morphology II**

Advanced topics in morphology.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3005 and third-year standing.

Seminars three hours a week.

LING 4007 [0.5 credit]**Phonology II**

Advanced topics in phonology.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4001 (no longer offered).

Prerequisite(s): LING 3007, and third-year standing.

Seminars three hours a week.

LING 4009 [0.5 credit]**Special Topic in Linguistics**

Examination of a topic or more specialized area in linguistics or language study. Topic to be announced.

Repeatable for credit when the topic changes.

Prerequisite(s): third- or fourth-year standing in Linguistics or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5009, for which additional credit is precluded.

Seminars three hours a week.

LING 4412 [0.5 credit]**Diversité du français**

Études des variétés du français, dans ses dimensions spatiales. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4412.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5412 and LING 5412, for which additional credit is precluded.

Seminars three hours a week.

LING 4413 [0.5 credit]**Diachronie du français**

Étude du français, dans ses dimensions historiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. The course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4413.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5413 and LING 5413, for which additional credit is precluded.

Seminars three hours a week.

LING 4414 [0.5 credit]**Analyse du français**

Étude du français, dans ses dimensions morphologiques, syntaxiques ou phonologiques. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails.

Course is taught in French, but students will submit written assignments in English.

Also listed as FREN 4414.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5414 and LING 5414, for which additional credit is precluded.

Seminars three hours a week.

LING 4415 [0.5 credit]**Variation du français**

Étude des variations internes de la langue, dans des dimensions orales/écrites. Le contenu précis de ce cours varie selon les années. Consulter le site web du Département de français pour obtenir les détails. Course is taught in French, but students submit assignments in English.

Also listed as FREN 4415.

Prerequisite(s): FREN 2401 and FREN 3050, or permission of the Department.

Also offered at the graduate level, with different requirements, as FREN 5415 and LING 5415, for which additional credit is precluded.

Seminars three hours a week.

LING 4505 [0.5 credit]**Formal Semantics**

Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.

Includes: Experiential Learning Activity

Also listed as PHIL 4505.

Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing, or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Seminars three hours a week.

LING 4510 [0.5 credit]**Lexical Semantics**

Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.

Includes: Experiential Learning Activity

Also listed as PHIL 4055.

Precludes additional credit for LING 4055 (no longer offered).

Prerequisite(s): LING 3505 or PHIL 3506, and third-year standing.

Also offered at the graduate level, with different requirements, as LING 5510, for which additional credit is precluded.

Seminar three hours a week.

LING 4601 [0.5 credit]**Cognitive Neuroscience of Language**

Further study of psychological and neurolinguistic mechanisms of adult language processing. May include topics from first language acquisition.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3601 or permission of the instructor. Also offered at the graduate level, with different requirements, as LING 5601, for which additional credit is precluded.

Seminars three hours a week.

LING 4603 [0.5 credit]**First Language Acquisition**

Advanced topics in language acquisition and development and the relative contributions of the environment, cognitive development, and inborn knowledge.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001 and LING 3603.

Also offered at the graduate level, with different requirements, as LING 5603, for which additional credit is precluded.

Seminars three hours a week.

LING 4604 [0.5 credit]**Practicum in Speech Language Pathology**

Through seven-hour-a-week field placements, students pursue personal learning objectives concerning the clinical application of the psycholinguistics of communication disorders and cognitive development. A term paper integrates experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the student's program of study.

Includes: Experiential Learning Activity

Prerequisite(s): LING 3604, fourth-year Honours standing in B.A. or B.Sc. in Linguistics with a Concentration in Psycholinguistics and Communication Disorders with a CGPA of 10.0 in the major, and permission from the School of Linguistics and Language Studies.

Field placement one day a week.

LING 4605 [0.5 credit]**Psycholinguistic Research Methods**

Experimental methodologies used in current psycholinguistic studies. Topics include experimental design and techniques, descriptive statistics, and interpreting and reporting research findings.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4009 Section "A" (2015-16 and 2016-17) and LING 4009 Section "B" (2013-14) and LING 4009 Section "C" (2017-18).

Prerequisite(s): third- or fourth-year Honours standing in Linguistics or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5605, for which additional credit is precluded.

Seminar three hours a week.

LING 4606 [0.5 credit]**Statistics for Language Research**

Application of statistical procedures to analysis of language data and to problems of measurement in experimental linguistics, applied linguistics, psycholinguistics, and related fields.

Includes: Experiential Learning Activity

Also listed as ALDS 4606.

Precludes additional credit for ALDS 4906/LING 4009 Section "B" if taken Winter 2015 or Winter 2016.

Prerequisite(s): Third-year standing in Linguistics or Applied Linguistics and Discourse Studies or Cognitive Science, or permission of the instructor.

Also offered at the graduate level, with different requirements, as LING 5606 and ALDS 5604, for which additional credit is precluded.

Seminar three hours a week.

LING 4801 [0.5 credit]**Linguistic Field Methods**

With a language consultant, students discover the phonological, morphological, and syntactic structures of the target language using linguistic elicitation. Language will vary from year to year, but will normally be a non-European language. Language documentation, data management, ethical issues surrounding research in Indigenous communities.

Includes: Experiential Learning Activity

Prerequisite(s): LING 2005 and LING 2007.

Also offered at the graduate level, with different requirements, as ALDS 5801, for which additional credit is precluded.

Lectures three hours a week.

LING 4802 [0.5 credit]**Historical Linguistics: English**

A theory-intensive course that will study the development of English starting with Proto-Indo-European progressing through Common Germanic to the stages of English itself. Topics include phonological sound changes, phonemic inventories, and morphological and syntactic typology.

Precludes additional credit for LING 4101.

Prerequisite(s): LING 2005 and LING 2007, and one of LING 3005, LING 3810 or LING 3811.

Also offered at the graduate level, with different requirements, as LING 5802, ENGL 5101., for which additional credit is precluded.

Seminars three hours a week.

LING 4805 [0.5 credit]**Old English**

Studies in Old English literature and its cultural and historical contexts. Instruction in grammar to facilitate reading knowledge of the Old English language.

Also listed as ENGL 4105.

Precludes additional credit for ENGL 3102 (no longer offered).

Prerequisite(s): fourth-year standing or permission of the department.

Seminar or lecture three hours a week.

LING 4900 [1.0 credit]**Independent Study in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.

LING 4901 [0.5 credit]**Independent Study in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics.

Prerequisite(s): permission of the instructor.

LING 4905 [1.0 credit]**Honours Project in Experimental Linguistics**

Students choose existing study in linguistic literature, replicate the study, present findings, compare to original study. Practical experience gathering and preparing materials, running experiments, analyzing data, interpreting findings; real, important contributions to the field of linguistics via replication studies (as mandated by the scientific method).

Includes: Experiential Learning Activity

Precludes additional credit for LING 4910.

Prerequisite(s): fourth-year Honours standing in Linguistics, with a Major CGPA of 9.0, and permission of the instructor.

Unscheduled.

LING 4910 [1.0 credit]**Honours Thesis in Linguistics**

Open to all candidates for the B.A. (Honours) in Linguistics. A thesis project selected in consultation with the School and carried out under the direction of a faculty supervisor.

Includes: Experiential Learning Activity

Precludes additional credit for LING 4905.

Prerequisite(s): fourth-year Honours standing in Linguistics with a CGPA of 10.0 in the major; one of LING 3004, LING 3007, LING 3505, or LING 3601; and permission of the instructor.

Mathematics (MATH)

Mathematics (MATH) Courses**Note:**

- See also the course listings under Statistics (STAT) in this Calendar.

Prerequisites for First-year Mathematics Courses in B.Math. Programs

Students who do not have the required Ontario Grade 12 Mathematics courses or equivalents may take MATH 0005 Precalculus: Functions and Graphs and MATH 0006 Precalculus: Trigonometric Functions and Complex Numbers in lieu of Advanced Functions, MATH 0107 Algebra and Geometry in lieu of the algebra component of Calculus and Vectors. These 0000-level mathematics courses serve as alternate prerequisites for MATH 1052 Calculus and Introductory Analysis I and MATH 1152 Introductory Algebra I. These courses would be in addition

to the minimum 15.0 credits required for B.Math programs, or 20.0 credits required for B.Math Honours programs.

MATH 0005 [0.5 credit]**Precalculus: Functions and Graphs**

Review of algebraic manipulations. Polynomials: the remainder theorem, and the factor theorem; graphing. Real and Complex roots. Absolute values. Inequalities. Functions, including composition of functions, and Inverse functions. Logarithmic and exponential functions. Not available for degree credit for students who have successfully completed: Grade 12 Mathematics - Advanced Functions, or an equivalent High School functions course.

Prerequisite(s): Grade 11 Functions (University/College Preparation), or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 0006 [0.5 credit]**Precalculus: Trigonometric Functions and Complex Numbers**

Angles and the unit circle, radian measure. Definitions of trigonometric functions. Fundamental relations, Law of Sines and Cosines. Analytic trigonometry, graphs, inverse functions. Trigonometric identities and equations. Applications in science and engineering. Complex numbers in polar form, de Moivre's Theorem, n-th roots of complex numbers.

Prerequisite(s): Grade 11 Functions (University/College Preparation), or MATH 0005, or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 0009 [0.5 credit]**Calculus and Vectors**

Limits and continuity. Differentiation rules. Trigonometric, logarithmic, and exponential functions, and their derivatives. Curve sketching. Optimization problems. Introduction to vectors. Dot and cross products. Projections. Equations of lines and planes. Intersection points and distances between points, lines, and planes. Precludes additional credit for MATH 0007.

Prerequisite(s): Grade 12 Mathematics (Advanced Functions); or both MATH 0005 and MATH 0006; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 0107 [0.5 credit]**Algebra and Geometry**

Vectors in the plane and in 3-space. Linear combinations and linear independence. Equations of lines and planes in space. Solution of systems of linear equations. Proofs by induction. Binomial Theorem. Logic.

Prerequisite(s): Grade 11 Functions (University/College Preparation) or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 1004 [0.5 credit]**Calculus for Engineering or Physics**

Limits. Differentiation of the elementary functions. Rules of differentiation. Inverse trigonometric functions. Applications of differentiation: max-min problems, curve sketching, approximations. Definite and indefinite integrals, techniques of integration. Applications to areas and volumes.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1007, MATH 1052.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005 and MATH 0006, or equivalent. Restricted to students in the Faculty of Engineering, or in certain B.Sc. and B.A.S. programs where specified. Lectures three hours a week, tutorial one hour a week.

MATH 1005 [0.5 credit]**Differential Equations and Infinite Series for Engineering or Physics**

First-order differential equations. Second-order linear equations with constant coefficients, undetermined coefficients, variation of parameters. Sequences and series, convergence tests, estimation of sums. Power series, Taylor series, remainders. Fourier series.

Precludes additional credit for BIT 2004 (no longer offered), BIT 2007 (no longer offered), MATH 1002 (no longer offered), MATH 2007, MATH 2052, and MATH 2404.

Prerequisite(s): i) MATH 1004; and ii) MATH 1104 (or MATH 1107), either previously or concurrently; or equivalents; or permission of the School. Restricted to students in the Faculty of Engineering, or in certain B.Sc. programs where specified. Lectures three hours a week, tutorial one hour a week.

MATH 1007 [0.5 credit]**Elementary Calculus I**

Limits. Differentiation of the elementary functions, including trigonometric functions. Rules of differentiation. Applications of differentiation: max-min problems, curve sketching, approximations. Introduction to integration: definite and indefinite integrals, areas under curves, fundamental theorem of calculus.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1004, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1052.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions; or MATH 0005 and MATH 0006; or equivalent. Lectures three hours a week, tutorial one hour a week.

MATH 1009 [0.5 credit]**Mathematics for Business**

An introductory course of mathematics for business. Thorough review of basic arithmetic and algebra. Elementary functions, their graphs, properties and applications in business models. Limits. Derivatives of elementary functions. Systems of linear equations/inequalities. Geometric series.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, BUSI 1705 (no longer offered), MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1052. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.

Prerequisite(s): Restricted to B.Com. and B.I.B students. Lectures three hours a week, tutorial one hour a week.

MATH 1052 [0.5 credit]**Calculus and Introductory Analysis I**

Properties of the real numbers. Limits. Sequences and series. Elementary functions. Continuity. Derivatives. Extreme values. Mean Value Theorem. L'Hospital's rules. Antiderivatives. An emphasis is placed on proofs and theory.

Precludes additional credit for BIT 1000, BIT 1100, BIT 1200, MATH 1002 (no longer offered), MATH 1004, MATH 1007, MATH 1009, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005 and MATH 0006 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.

Lectures three hours a week, tutorial one and one half hours a week.

MATH 1104 [0.5 credit]**Linear Algebra for Engineering or Science**

Systems of linear equations. Matrix algebra. Determinants. Invertible matrix theorem. Cramer's rule. Vector space \mathbb{R}^n ; subspaces, bases. Eigenvalues, diagonalization. Linear transformations, kernel, range. Complex numbers (including De Moivre's theorem). Inner product spaces and orthogonality. Applications.

Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1107, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. Note: MATH 1119 is not an acceptable substitute for MATH 1104.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School. Restricted to students in the Faculty of Engineering, the School of Computer Science, or in certain B.Sc. and B.A.S. programs where specified. Lectures three hours a week and tutorial one hour a week.

MATH 1107 [0.5 credit]**Linear Algebra I**

Systems of linear equations; vector space of n -tuples, subspaces, bases; matrix transformations, kernel, range; matrix algebra and determinants. Dot product. Complex numbers (including de Moivre's Theorem, and n -th roots). Eigenvalues, diagonalization and applications. Note: MATH 1119 is not an acceptable substitute for MATH 1107.

Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School.

Lectures three hours a week and tutorial one hour a week.

MATH 1119 [0.5 credit]**Linear Algebra: with Applications to Business**

Introduction to systems of linear equations, geometric interpretation in two and three dimensions, introduction to matrices, vector addition and scalar multiplication, linear dependence, matrix operations, rank, inversion, invertible matrix theorem, determinants. Use of illustrative examples related to business.

Precludes additional credit for , but is not an acceptable substitute for: BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1107. BUSI 1704 (no longer offered), MATH 1109 (no longer offered), MATH 1401/ECON 1401, MATH 1402/ECON 1402, MATH 1152. This course is not acceptable for (substitute) credit in any of the following degree programs: B.Math., and also B.Sc., B.C.S., B.Eng., B.I.D.

Prerequisite(s): Ontario Grade 12 Mathematics of Data Management; or Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 1152 [0.5 credit]**Introductory Algebra I**

Properties of numbers. Modular arithmetic. Fields, including complex numbers and finite fields. Vector spaces. Matrix algebra. Solutions of linear systems. Linear dependence. Spanning sets. Bases. Subspaces. The rank-nullity theorem. Linear transformations. An emphasis is placed on proofs and theory.

Precludes additional credit for BIT 1001, BIT 1101, BIT 1201, MATH 1102 (no longer offered), MATH 1104, MATH 1107, MATH 1119, MATH 1401/ECON 1401, MATH 1402/ECON 1402.

Prerequisite(s): i) Grade 12 Mathematics: Advanced Functions, and Grade 12 Mathematics: Calculus and Vectors, with grades of at least 75% in each; or MATH 0005, MATH 0006, and MATH 0107 with grades of at least B in each; or equivalents; and ii) MATH 1800 (may be taken concurrently); or permission of the School of Mathematics and Statistics.

Lectures three hours a week, tutorial one and a half hours a week.

MATH 1401 [0.5 credit]**Elementary Mathematics for Economics I**

Functional relations: functional forms and error terms. Graphing economic magnitudes: scatter diagrams, time-series graphs, functional relationships. Applied calculus: mechanics of differentiation and integration, elasticity, consumer/producer surplus. Applied algebra: solving systems of linear equations and Keynesian national-income analysis. Problem solving approaches.

Also listed as ECON 1401.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201; MATH 1007, MATH 1009, MATH 1052, MATH 1104, MATH 1107, MATH 1119, MATH 1152.

Prerequisite(s): Ontario Grade 12 U Advanced Functions, or MATH 0005, or equivalent; and ECON 1000 or FYSM 1003, which may be taken concurrently with MATH 1401/ECON 1401.

Lectures three hours a week, tutorial one hour a week.

MATH 1402 [0.5 credit]**Elementary Mathematics for Economics II**

Calculus: including partial differentiation, definite and indefinite integrals, techniques of integration, and unconstrained optimization. Vectors and matrices: scalar multiplication, inner product, linear dependence, matrix operations, rank, invertible matrix theorem, and determinants. Economic applications such as profit maximization, comparative statics, and the Leontief input-output model.

Also listed as ECON 1402.

Precludes additional credit for BIT 1000, BIT 1001, BIT 1100, BIT 1101, BIT 1200, BIT 1201; MATH 1007, MATH 1009, MATH 1052, MATH 1104, MATH 1107, MATH 1119, MATH 1152.

Prerequisite(s): ECON 1000 or FYSM 1003 with a grade of C- or higher, and ECON 1401/MATH 1401 with a grade of C- or higher.

Lectures three hours a week, tutorial one hour a week.

MATH 1800 [0.5 credit]**Introduction to Mathematical Reasoning**

Elementary logic, propositional and predicate calculus, quantifiers, sets and functions, bijections and elementary counting, the concept of infinity, relations, well ordering and induction. The practice of mathematical proof in elementary number theory and combinatorics.

Precludes additional credit for MATH 1805/COMP 1805.

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 1805 [0.5 credit]**Discrete Structures I**

Introduction to discrete mathematics and discrete structures. Topics include: propositional logic, predicate calculus, set theory, complexity of algorithms, mathematical reasoning and proof techniques, recurrences, induction, finite automata and graph theory. Material is illustrated through examples from computing.

Includes: Experiential Learning Activity

Precludes additional credit for MATH 1800.

Prerequisite(s): one Grade 12 university preparation Mathematics course; and one of: COMP 1005 or or COMP 1405 or SYSC 1100 (which may be taken concurrently).

Lectures three hours a week, tutorial one hour a week.

MATH 2000 [1.0 credit]**Multivariable Calculus and Fundamentals of Analysis**

Higher dimensional calculus, chain rule, gradient, line and multiple integrals with applications. Use of implicit and inverse function theorems. Real number axioms, limits, continuous functions, differentiability, infinite series, uniform convergence, the Riemann integral.

Precludes additional credit for BIT 2005 (no longer offered), MATH 2004, MATH 2008, and MATH 3009.

Prerequisite(s): i) MATH 2052 with a grade of C+ or higher, or (MATH 2007 or MATH 1005 with a grade of B+ or higher and permission of the School); and ii) MATH 2152 with a grade of C+ or higher, or MATH 1107 or MATH 1104 with a grade of B+ or higher; and iii) MATH 1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2004 [0.5 credit]**Multivariable Calculus for Engineering or Physics**

Curves and surfaces. Polar, cylindrical and spherical coordinates. Partial derivatives, gradients, extrema and Lagrange multipliers. Exact differentials. Multiple integrals over rectangular and general regions. Integrals over surfaces. Line integrals. Vector differential operators. Green's Theorem, Stokes' theorem, Divergence Theorem. Applications.

Precludes additional credit for BIT 2005, MATH 2000, and MATH 2008.

Prerequisite(s): i) MATH 1005 or MATH 2007; and ii) MATH 1104 or MATH 1107; or permission of the School.

Restricted to students in the Faculty of Engineering, or in certain B.Sc. programs where specified.

Lectures three hours a week, tutorial one hour a week.

MATH 2007 [0.5 credit]**Elementary Calculus II**

Techniques of integration, improper integrals. Polar coordinates, parametric equations. Indeterminate forms, sequences and series, Taylor's formula and series.

Precludes additional credit for BIT 2007 (no longer offered), MATH 1002 (no longer offered), MATH 1005, MATH 2052.

Prerequisite(s): i) MATH 1004, or a grade of C- or higher in MATH 1007; or MATH 1052 and permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2008 [0.5 credit]**Intermediate Calculus**

Partial differentiation, chain rule, gradient, line and multiple integrals with applications, transformations of multiple integrals.

Precludes additional credit for BIT 2005 (no longer offered), MATH 2000, and MATH 2004.

Prerequisite(s): one of MATH 1005, MATH 2052, or MATH 2007, and one of MATH 1104, MATH 1107, or MATH 1152.

Lectures three hours a week and one hour tutorial.

MATH 2052 [0.5 credit]**Calculus and Introductory Analysis II**

Definite, indefinite integrals. Improper integrals. The fundamental theorem of calculus. An introduction to differential equations. Sequences and series of functions. Power series. Taylor's formulae. Uniform convergence. An emphasis is placed on proofs and theory.

Precludes additional credit for BIT 2007, MATH 1002 (no longer offered), MATH 1005, MATH 2007.

Prerequisite(s): (i) MATH1052 with a grade of C- or higher or (MATH1007 or MATH1004 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one and one half hours a week.

MATH 2100 [1.0 credit]**Algebra**

Introduction to group theory: permutation groups, Lagrange's theorem, normal subgroups, homomorphism theorems. Introduction to ring theory: ring of polynomials, integral domains, ideals, homomorphism theorems.

Hermitian forms, spectral theorem for normal operators, bilinear and quadratic forms, classical groups.

Precludes additional credit for MATH 2108 and MATH 3101.

Prerequisite(s): i) MATH 2152 with a grade of C+ or higher, or (MATH 2107 with a grade of B+ or higher and permission of the School); and ii) MATH 1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2107 [0.5 credit]**Linear Algebra II**

Finite-dimensional vector spaces (over R and C), subspaces, linear independence and bases. Linear transformations and matrices. Inner product spaces (over R and C); Orthonormal bases. Eigenvalues and diagonalization. Bilinear and quadratic forms; principal axis theorem.

Precludes additional credit for MATH 1102 (no longer offered), MATH 2152.

Prerequisite(s): i) MATH 1104, or a grade of C- or higher in MATH 1107 or MATH 1109; and ii) a grade of C- or higher in MATH 1007 or equivalent; or MATH 1152 and permission of the School. Note: in item i), MATH 1119 is NOT acceptable as a substitute for MATH 1109.

Lectures three hours a week and one hour tutorial.

MATH 2108 [0.5 credit]**Abstract Algebra I**

Sets and relations, number theory, group theory, ring theory, cardinal numbers.

Precludes additional credit for MATH 3101 and MATH 2100.

Prerequisite(s): i) MATH 2152 or MATH 2107; and ii) MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or COMP 1805; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 2152 [0.5 credit]**Introductory Algebra II**

Linear transformations. Determinants. Eigenvalues and eigenspaces. Diagonalization and other canonical forms. Inner products. An emphasis is placed on proofs and theory.

Precludes additional credit for MATH 1102 (no longer offered) and MATH 2107.

Prerequisite(s): (i) MATH1152 with a grade of C- or higher or (MATH1107 or MATH1104 with a grade of B+ or higher and permission of the School), and (ii) MATH1800 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one and a half hours a week.

MATH 2210 [0.5 credit]**Introduction to Geometry**

An introduction to classical geometry; Euclidean plane geometry; plane tiling; polytopes in three and four dimensions; curved surfaces; Euler characteristic. This course is intended for a general audience, and is available to B.Math. students for credit only as a free elective.

Prerequisite(s): Grade 12 Mathematics and second-year standing.

Lectures three hours a week, tutorial one hour a week.

MATH 2404 [0.5 credit]**Ordinary Differential Equations I**

First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.

Precludes additional credit for BIT 2004 (no longer offered), MATH 1005, MATH 2454.

Prerequisite(s): MATH 2052 and MATH 1152 (or MATH 1107 and MATH 2007).

Lectures three hours a week and one hour tutorial.

MATH 2454 [0.5 credit]**Ordinary Differential Equations (Honours)**

Existence and uniqueness theorems. First-order equations, linear second- and higher-order equations, linear systems, stability of second-order systems.

Precludes additional credit for MATH 2404, BIT 2004 (no longer offered).

Prerequisite(s): MATH 2052 or MATH 2007 or MATH 1005 with a grade of C+ or higher, and MATH 2152 or MATH 2107 with a grade of C+ or higher.

Lectures three hours a week, tutorial one hour a week.

MATH 2800 [0.5 credit]**Discrete Mathematics and Algorithms**

An introduction to discrete mathematics and algorithms in the context of the computational sciences. Basic number theory and counting methods, algorithms for strings, trees and sequences. Applications to DNA and protein sequencing problems. Analysis and complexity of algorithms.

Also listed as CMPS 2800.

Precludes additional credit for Only one of MATH 1805/COMP 1805 or MATH 2800/CMPS 2800 may count for credit in a B.Math. program.

Prerequisite(s): COMP 1006 and at least one of MATH 1007, MATH 1107, or STAT 2507.

Lectures three hours a week.

MATH 2907 [0.5 credit]**Directed Studies (Honours)**

Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3001 [0.5 credit]**Real Analysis I (Honours)**

Metric spaces and their topologies, continuous maps, completeness, compactness, connectedness, introduction to Banach spaces.

Prerequisite(s): MATH 2000 with a grade of C- or higher; or (MATH 3009 and MATH 1800) each with a grade of B or higher, and permission of the instructor; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3002 [0.5 credit]**Real Analysis II (Honours)**

Function spaces, pointwise and uniform convergence, Weierstrass approximation theorem, Lebesgue measure and Lebesgue integral on the real line, Hilbert space, Fourier series.

Prerequisite(s): MATH 3001 with a grade of C- or higher, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3003 [0.5 credit]**Advanced Differential Calculus (Honours)**

Review of multivariable differentiation and integration. Vector fields, differential forms and exterior algebra. Introduction to manifolds and tangent bundles. Stokes' Theorem. Applications such as differential equations and the calculus of variations.

Prerequisite(s): MATH 3001 with a grade of C- or higher, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3007 [0.5 credit]**Functions of a Complex Variable**

Analytic functions, contour integration, residue calculus, conformal mapping. Intended for non-engineering students.

Precludes additional credit for MATH 3057 and PHYS 3807.

Prerequisite(s): one of MATH 2004, MATH 2008 or MATH 2009, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3008 [0.5 credit]**Ordinary Differential Equations (Honours)**

Analytic ordinary differential equations: series solutions of ordinary differential equations about ordinary and regular singular points. Asymptotic solutions. Sturm-Liouville theory. Bessel and Legendre functions. Fourier series.

Precludes additional credit for MATH 3404 and PHYS 3808.

Prerequisite(s): i) MATH 2000 with a grade of C- or higher, or (MATH 3009 with a grade of B or higher, and permission of the instructor); and ii) MATH 2454 with a grade of C- or higher, or (MATH 2404 with a grade of B or higher, and permission of the instructor).

Lectures three hours a week and one hour tutorial.

MATH 3009 [0.5 credit]**Introductory Analysis**

The real number system, sequences and series, functions of a single real variable, derivatives, the definite integral, uniform convergence.

Precludes additional credit for MATH 2000.

Prerequisite(s): one of MATH 2004, MATH 2008, MATH 2009, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3057 [0.5 credit]**Functions of a Complex Variable (Honours)**

Analytic functions, contour integration, residue calculus, conformal mappings.

Precludes additional credit for MATH 3007 and PHYS 3807.

Prerequisite(s): MATH 2000 with a grade of C- or higher; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3101 [0.5 credit]**Algebraic Structures with Computer Applications**

Introduction to algebraic structures: groups, rings, fields, lattices, and Boolean algebras; with applications of interest to students in Computer Science. This course may not be used to meet the 3000-level course requirements in any B.Math or B.Math Honours program in Mathematics and Statistics.

Precludes additional credit for MATH 2108 and MATH 2100.

Prerequisite(s): i) MATH 2107 or MATH 2152; and ii) either COMP 1805 or MATH 1800 (MATH 1800 may be taken concurrently, with permission of the School); or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3106 [0.5 credit]**Introduction to Group Theory (Honours)**

Homomorphism theorems; groups acting on sets; permutation groups and groups of matrices; Sylow theory for finite groups; finitely generated abelian groups; generators and relations; applications.

Precludes additional credit for MATH 3108.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B or higher; and MATH 1800 with a grade of B or higher; and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3107 [0.5 credit]**Linear Algebra III**

Similarity and unitary triangularization of matrices. Direct methods of solving a system of linear equations. Iterative techniques. Bounds for eigenvalues. Power method and deflation techniques of approximation. Emphasis is primarily on computational aspects.

Prerequisite(s): i) a grade of C- or higher in MATH 2152 or MATH 2107; and ii) credit in MATH 2052 or MATH 2007; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3108 [0.5 credit]**Abstract Algebra II**

Groups and rings. Permutations. Finite symmetry groups. Polynomials, unique factorization domains. Quotient rings, ideals. Field extensions, finite fields. Polynomial equations. Geometric constructions - three famous problems: duplication of the cube, trisection of an arbitrary angle, quadrature of the circle.

Precludes additional credit for MATH 3106 and MATH 3158.

Prerequisite(s): MATH 2108, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3158 [0.5 credit]**Rings and Fields (Honours)**

Rings, integral domains, Euclidean and principal ideal domains, fields, polynomial rings over a field, algebraic extensions of fields, the fundamental theorem of Galois theory, finite fields, applications.

Precludes additional credit for MATH 3108.

Prerequisite(s): MATH 2100 with a grade of C- or higher, or (MATH 2108 or MATH 3101 with a grade of B or higher and MATH 1800 with a grade of B or higher and permission of the instructor), or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3206 [0.5 credit]**Plane Projective Geometry**

Axioms of Desarguesian geometry, principle of duality; projectivities, perspectivities, and the fundamental theorem; collineations (homologies and elations); correlations (polarities and conics); algebraic model; projective curves; introduction to finite projective planes.

Precludes additional credit for MATH 3256.

Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.

Lectures three hours a week and one hour tutorial.

MATH 3210 [0.5 credit]**Euclidean and Non-Euclidean Geometry**

Euclidean isometry and similarity groups; geometry of circles; inversion; hyperbolic geometry: Poincare disk model of the hyperbolic plane.

Precludes additional credit for MATH 3205.

Prerequisite(s): MATH 2100 or MATH 2108 or MATH 3101.

Lectures three hours a week, tutorial one hour a week.

MATH 3306 [0.5 credit]**Elements of Set Theory (Honours)**

Axioms of set theory. Development of the systems of natural numbers and the real numbers. Axiom of choice, Zorn's lemma, well-ordering. The Schröder-Bernstein theorem, cardinal numbers, ordinal numbers, transfinite induction, cardinal and ordinal arithmetics.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B or higher; and MATH 1800 with a grade of B or higher; and permission of the instructor); or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3355 [0.5 credit]**Number Theory and Applications (Honours)**

Congruences, distribution of primes, arithmetic functions, primitive roots, quadratic residues, quadratic reciprocity law, continued fractions, Diophantine equations, and applications: public key cryptography, primality testing and factoring in relation to cryptography.

Precludes additional credit for MATH 3809.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101 with a grade of B- or higher; and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3404 [0.5 credit]**Ordinary Differential Equations II**

Series solutions of ordinary differential equations of second order about regular singular points; asymptotic solutions. Systems of ordinary differential equations of first order; matrix methods. Existence and uniqueness theorems. Nonlinear autonomous systems of order 2; qualitative theory. Numerical solutions of ordinary differential equations.

Precludes additional credit for MATH 3008.

Prerequisite(s): MATH 2404, MATH 2008; and MATH 2152 or MATH 2107.

Lectures three hours a week and one hour tutorial.

MATH 3705 [0.5 credit]**Mathematical Methods I**

Laplace transforms, series solutions of ordinary differential equations, the Frobenius method. Fourier series and Fourier transforms, solutions of partial differential equations of mathematical physics, boundary value problems, applications.

Precludes additional credit for PHYS 3808. This course may be taken for credit as a 3000-level Honours Mathematics course by students in any Honours program in the School of Mathematics and Statistics.

Prerequisite(s): i) MATH 1005 or MATH 2404, and ii) MATH 2004 or MATH 2008 or MATH 2009; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3800 [0.5 credit]**Mathematical Modeling and Computational Methods**

Design and analysis of mathematical models for problems in science. Computational methods, including function evaluation, interpolation, solution of linear equations, root finding, integration, solution of differential equations, Fourier series and Monte Carlo methods.

Includes: Experiential Learning Activity

Also listed as CMPS 3800.

Precludes additional credit for MATH 3806/COMP 3806.

Prerequisite(s): i) MATH 1107 or MATH 1104; ii) MATH 1005 or MATH 2007; and iii) knowledge of a computer language.

Lectures three hours a week, laboratory one hour a week.

MATH 3801 [0.5 credit]**Linear Programming**

Systems of linear inequalities, formulation of linear programming problems, geometric method, the simplex method, duality theory, complementary slackness, sensitivity analysis, branch-and-bound method and cutting plane method for integer linear programming, applications and extensions.

Precludes additional credit for ECON 4004, SYSC 3200.

Prerequisite(s): MATH 2152 or MATH 2107, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3802 [0.5 credit]**Combinatorial Optimization**

Network flow problems, network simplex method, max-flow min-cut problem, integral polyhedra, minimum-weight spanning tree problem, maximum matching problem, maximum stable set problem, introduction to approximation algorithms.

Prerequisite(s): MATH 3801 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3804 [0.5 credit]**Design and Analysis of Algorithms I**

An introduction to the design and analysis of algorithms. Topics include: recurrence relations, sorting and searching, divide-and-conquer, dynamic programming, greedy algorithms, NP-completeness.

Also listed as COMP 3804.

Prerequisite(s): i) one of COMP 2402 or SYSC 2100; and ii) one of COMP 2804 or MATH 3855 or MATH 3825 or COMP 3805.

Lectures and tutorials three to four and a half hours a week.

MATH 3806 [0.5 credit]**Numerical Analysis (Honours)**

Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. Implementation of numerical methods using a computer language.

Includes: Experiential Learning Activity

Precludes additional credit for MATH 3800.

Prerequisite(s): i) MATH 2000 with a grade of C- or higher; and ii) MATH 1152 with a grade of C- or higher, or (MATH 1107 or MATH 1104 with a grade of B or higher and permission of the instructor).

Lectures three hours a week, laboratory one hour a week.

MATH 3807 [0.5 credit]**Mathematical Software (Honours)**

Implementation of numerical methods using numerical software packages. Development of scientific and/or operations research applications using application programming interfaces of numerical or optimization libraries. Functional programming for data analysis and machine learning. Experience working with Python, C++, or Java is essential.

Includes: Experiential Learning Activity

Also listed as COMP 3807.

Prerequisite(s): A grade of C- or higher in MATH 3806 or COMP 3806.

Lectures three hours a week, laboratory one hour a week.

MATH 3808 [0.5 credit]**Mathematical Analyses of Games of Chance**

This course covers mathematics used in the modern casino gaming industry. The topics include probabilities, odds, house advantages, variance and risks, optimal strategies, random walks and gambler's ruin, and gaming revenue estimation. Examples are taken from various games such as Roulette, Blackjack, and Poker.

Prerequisite(s): one of STAT 2655, STAT 2605, STAT 2507, STAT 2606, STAT 3502, or MATH 3825 or MATH 3855.

Lectures three hours a week, tutorial one hour a week.

MATH 3809 [0.5 credit]**Introduction to Number Theory and Cryptography**

Congruences, distribution of primes, general cryptographic systems, public key cryptographic systems and authentication using number theory, primality testing and factoring in relation to cryptography, continued fractions and Diophantine equations.

Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100; knowledge of a computer language.

Lectures three hours a week and one hour tutorial.

MATH 3819 [0.5 credit]**Modern Computer Algebra**

Algorithms for multiplication, division, greatest common divisors and factorization over the integers, finite fields and polynomial rings. Basic tools include modular arithmetic, discrete Fourier transform, Chinese remainder theorem, Newton iteration, and Hensel techniques. Some properties of finite fields and applications to cryptography.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 2108 or MATH 3101 or MATH 2100, COMP 1005 or equivalent; or permission of the School.

Lectures three hours a week, tutorial/laboratory one hour a week.

MATH 3825 [0.5 credit]**Discrete Structures and Applications**

Enumeration: elementary methods, inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory and algorithms: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes.

Precludes additional credit for MATH 3805 (no longer offered), and MATH 3855 and COMP 3805.

Prerequisite(s): MATH 2108 or MATH 3101.

Lectures three hours a week, tutorial one hour a week.

MATH 3855 [0.5 credit]**Discrete Structures and Applications (Honours)**

Enumeration: inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory: connectivity, planarity, Hamilton paths and Euler trails. Error-correcting codes. Designs and finite geometries. Symmetry and counting.

Also listed as COMP 3805.

Precludes additional credit for MATH 3805 (no longer offered) and MATH 3825.

Prerequisite(s): MATH 2100 with a grade of C- or higher; or (MATH 2108 or MATH 3101) with a grade of B or higher.

Lectures three hours a week, tutorial one hour a week.

MATH 3907 [0.5 credit]**Directed Studies**

Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3999 [0.0 credit]**Co-operative Work Term Report (Honours)**

On completion of each work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 4002 [0.5 credit]**Fourier Analysis (Honours)**

Fourier series, Fourier integrals; introduction to harmonic analysis on locally compact abelian groups, Plancherel Theorem, Pontryagin duality; selected applications.

Prerequisite(s): MATH 3001 or permission of the School. Lectures three hours a week.

MATH 4003 [0.5 credit]**Functional Analysis (Honours)**

Banach spaces and bounded linear operators, Hahn-Banach extension and separation, dual spaces, bounded inverse theorems, uniform boundedness principle, applications. Compact operators.

Prerequisite(s): MATH 4007 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5008, for which additional credit is precluded.

Lectures three hours a week.

MATH 4007 [0.5 credit]**Measure and Integration Theory (Honours)**

Lebesgue measure and integration on the real line; sigma algebras and measures; integration theory; L_p spaces; Fubini's theorem; decomposition theorems and Radon-Nikodym derivatives.

Prerequisite(s): MATH 3001 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5007, for which additional credit is precluded.

Lectures three hours a week.

MATH 4102 [0.5 credit]**Group Representations and Applications (Honours)**

An introduction to the group representations and character theory, with selected applications.

Prerequisite(s): MATH 3106, or a grade of B or higher in MATH 3108.

Also offered at the graduate level, with different requirements, as MATH 5102, for which additional credit is precluded.

Lectures three hours a week.

MATH 4105 [0.5 credit]**Rings and Modules (Honours)**

Fundamental concepts in rings and modules, structure theorems, applications.

Prerequisite(s): MATH 3158 or permission of the School. Lectures three hours a week.

MATH 4106 [0.5 credit]**Group Theory (Honours)**

Fundamental principles as applied to abelian, nilpotent, solvable, free and finite groups; representations.

Prerequisite(s): MATH 3106 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5106, for which additional credit is precluded.

Lectures three hours a week.

MATH 4107 [0.5 credit]**Commutative Algebra (Honours)**

Fields, including algebraic and transcendental extensions, Galois theory, valuation theory; Noetherian commutative rings, including Noether decomposition theorem and localization.

Prerequisite(s): MATH 3158 or permission of the School. Lectures three hours a week.

MATH 4108 [0.5 credit]**Homological Algebra and Category Theory (Honours)**

Axioms of set theory; categories, functors, natural transformations; free, projective, injective and flat modules; tensor products and homology functors, derived functors; dimension theory.

Prerequisite(s): MATH 3158 or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5108, for which additional credit is precluded.

Lectures three hours a week.

MATH 4109 [0.5 credit]**Fields and Coding Theory (Honours)**

Introduction to field theory, emphasizing the structure of finite fields, primitive elements and irreducible polynomials. The influence of computational problems will be considered. Theory and applications of error-correcting codes: algebraic codes, convolution codes, decoding algorithms, and analysis of code performance.

Prerequisite(s): MATH 2100, or MATH 3101 or MATH 2108 or equivalent; or permission of the School.

Lectures three hours a week.

MATH 4205 [0.5 credit]**Introduction to General Topology (Honours)**

Topological spaces, maps, subspaces, product and identification topologies, separation axioms, compactness, connectedness.

Prerequisite(s): MATH 3001 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5205, for which additional credit is precluded.

Lectures three hours a week.

MATH 4206 [0.5 credit]**Introduction to Algebraic Topology (Honours)**

An introduction to homotopy theory. Topics include the fundamental group, covering spaces and the classification of two-dimensional manifolds.

Prerequisite(s): MATH 3106 and MATH 4205; or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5206, for which additional credit is precluded.

Lectures three hours a week.

MATH 4207 [0.5 credit]**Foundations of Geometry (Honours)**

A study of at least one modern axiom system of Euclidean and non-Euclidean geometry, embedding of hyperbolic and Euclidean geometries in the projective plane, groups of motions, models of non-Euclidean geometry.

Prerequisite(s): MATH 3106 (may be taken concurrently) or permission of the School.

Lectures three hours a week.

MATH 4208 [0.5 credit]**Introduction to Differentiable Manifolds (Honours)**

Introduction to differentiable manifolds; Riemannian manifolds; vector fields and parallel transport; geodesics; differential forms on a manifold; covariant derivative; Betti numbers.

Prerequisite(s): MATH 3002 or permission of the School.

Lectures three hours a week.

MATH 4305 [0.5 credit]**Analytic Number Theory (Honours)**

Dirichlet series, characters, Zeta-functions, prime number theorem, Dirichlet's theorem on primes in arithmetic progressions, binary quadratic forms.

Prerequisite(s): MATH 3057 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5305, for which additional credit is precluded.

Lectures three hours a week.

MATH 4306 [0.5 credit]**Algebraic Number Theory (Honours)**

Algebraic number fields, bases, algebraic integers, integral bases, arithmetic in algebraic number fields, ideal theory, class number.

Prerequisite(s): MATH 3158 (may be taken concurrently) or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5306, for which additional credit is precluded.

Lectures three hours a week.

MATH 4600 [0.5 credit]**Case Studies in Operations Research (Honours)**

Applications of the principles of Operations Research to practical problems in business, management, and science. Students present at least one case and analyze cases in the published literature. Cases may also be presented by visiting practitioners.

Includes: Experiential Learning Activity

Precludes additional credit for Students in Honours Mathematics/Statistics programs may only take course as a free option.

Prerequisite(s): STAT 2509 (or STAT 2559) and MATH 3801; or permission of the School.

Seminars three hours a week.

MATH 4700 [0.5 credit]**Partial Differential Equations (Honours)**

First-order partial differential equations. Classification of second-order linear partial differential equations; the diffusion equation, wave equation and Laplace's equation; separation of variables; Fourier and Laplace transform methods for the solution of initial/boundary value problems; Green's functions.

Prerequisite(s): MATH 3057 and one of MATH 3008 or MATH 3705, or permission of the School.

Lectures three hours a week.

MATH 4701 [0.5 credit]**Topics in Differential Equations (Honours)**

Topics in the theory and application of differential equations; for example, hyperbolic systems, fluid dynamics, nonlinear wave equations, optimal mass transport, control theory, calculus of variations.

Prerequisite(s): i) MATH 3008; and ii) one of MATH 3001 or MATH 3057; or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5407, for which additional credit is precluded.

Lectures three hours a week.

MATH 4703 [0.5 credit]**Dynamical Systems (Honours)**

Basic concepts of dynamical systems. Vector formulation for systems. Theory of autonomous systems in one, two and higher dimensions. Limit sets, stability. Phase plane, qualitative interpretation, limit cycles and attractors. Parametric dependence, bifurcations and chaos. Applications.

Prerequisite(s): MATH 3001 and MATH 3008 or permission of the School.

Lectures three hours a week.

MATH 4708 [0.5 credit]**Asymptotic Methods of Applied Mathematics (Honours)**

Asymptotic series: properties, matching, application to differential equations. Asymptotic expansion of integrals: elementary methods, methods of Laplace, stationary phase and steepest descent, Watson's lemma, Riemann-Lebesgue lemma. Perturbation methods: regular and singular perturbation for differential equations, multiple scale analysis, boundary layer theory, WKB theory. Prerequisite(s): MATH 3057 and at least one of MATH 3008 or MATH 3705, or permission of the School. Also offered at the graduate level, with different requirements, as MATH 5408, for which additional credit is precluded.

Lectures three hours a week.

MATH 4801 [0.5 credit]**Topics in Combinatorics (Honours)**

An in-depth study of one or more topics from: generating functions, Polya's theory of counting, block designs, coding theory, partially ordered sets and Ramsey theory. Prerequisite(s): MATH 2100 and MATH 3855 or permission of the School.

Lectures three hours a week.

MATH 4802 [0.5 credit]**Introduction to Mathematical Logic (Honours)**

Symbolic logic, propositional and predicate calculi, set theory and model theory, completeness. Prerequisite(s): MATH 2100 or permission of the School.

Lectures three hours a week.

MATH 4803 [0.5 credit]**Computable Functions (Honours)**

Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness.

Also listed as COMP 4803.

Prerequisite(s): MATH 2100 or MATH 3855 or permission of the School.

Lectures three hours a week.

MATH 4805 [0.5 credit]**Theory of Automata (Honours)**

Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems. Also listed as COMP 4805.

Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5605, for which additional credit is precluded.

Lectures three hours a week.

MATH 4806 [0.5 credit]**Numerical Linear Algebra (Honours)**

Matrix computations, conditioning/stability, direct methods for linear systems, classical iterative methods: Jacobi, Gauss-Seidel; modern iterative methods, Arnoldi decomposition, GMRES and other Krylov subspace-based methods for sparse and structured matrices; numerical solution of eigenvalue problems, implementation using suitable programming language, application to differential equations/optimization problems.

Also listed as COMP 4806.

Prerequisite(s): MATH 2152 or MATH 2107; MATH 2000 and MATH 3806; or permission of the School.

Lectures three hours a week.

MATH 4807 [0.5 credit]**Game Theory (Honours)**

One-player games, two-player zero-sum games, multi-player games, games in normal form, games in extensive form, utility theory, Nash equilibrium and Nash arbitration scheme, games in characteristic function form, cooperative solutions, dominations, stable sets, core, Shapley value, applications of game theory.

Prerequisite(s): MATH 3801 or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5607, for which additional credit is precluded.

Lectures three hours a week.

MATH 4808 [0.5 credit]**Graph Theory and Algorithms (Honours)**

Paths, circuits, Eulerian and Hamiltonian graphs, connectivity, colouring problems, matching, Ramsey theory, network flows.

Prerequisite(s): MATH 3106 or MATH 3158 or MATH 3855 or permission of the School.

Lectures three hours a week.

MATH 4809 [0.5 credit]**Mathematical Cryptography (Honours)**

Topics covered include: a general survey of public key cryptography; classical applications of finite fields and number theory; relevant background in geometry and algebraic curves; computational issues concerning elliptic curves; elliptic curve cryptosystems; security issues.

Prerequisite(s): MATH 3158, or permission of the School.

Lectures three hours a week.

MATH 4811 [0.5 credit]**Combinatorial Design Theory (Honours)**

Existence and construction of combinatorial designs: finite geometries, pairwise balanced designs, balanced incomplete block designs, Steiner triple systems, symmetric designs, PBD closure, latin squares, transversal designs, and applications to information theory.

Prerequisite(s): MATH 3855, or permission of the School.

Lectures three hours a week.

MATH 4816 [0.5 credit]**Numerical Analysis for Differential Equations (Honours)**

Floating point arithmetic; numerical solution of ODEs; finite difference methods for PDEs; stability, accuracy and convergence: von Neumann analysis, CFL condition, Lax Theorem. Finite element methods: boundary value problems and elliptic PDEs. Spectral and pseudo-spectral methods.

Prerequisite(s): MATH 2454 and MATH 3806, or permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5806, for which additional credit is precluded.

Lectures three hours a week.

MATH 4821 [0.5 credit]**Quantum Computing (Honours)**

Space of quantum bits; entanglement. Observables in quantum mechanics. Density matrix and Schmidt decomposition. Quantum cryptography. Classical and quantum logic gates. Quantum Fourier transform. Shor's quantum algorithm for factorization of integers.

Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5821, for which additional credit is precluded.

Lectures three hours a week.

MATH 4822 [0.5 credit]**Wavelets and Digital Signal Processing (Honours)**

Lossless compression methods. Discrete Fourier transform and Fourier-based compression methods. JPEG and MPEG. Wavelet analysis. Digital filters and discrete wavelet transform. Daubechies wavelets. Wavelet compression.

Prerequisite(s): MATH 2152 (or MATH 2107) with a grade of C+ or better, and permission of the School.

Also offered at the graduate level, with different requirements, as MATH 5822, for which additional credit is precluded.

Lectures three hours a week.

MATH 4905 [0.5 credit]**Honours Project (Honours)**

Consists of a written report on some approved topic or topics in the field of mathematics, together with a short lecture on the report.

Includes: Experiential Learning Activity

Prerequisite(s): B.Math.(Honours) students only.

MATH 4907 [0.5 credit]**Directed Studies (Honours)**

Prerequisite(s): B.Math.(Honours) students only.

Mechanical Engineering (MECH)

Mechanical Engineering (MECH) Courses**MECH 3002 [0.5 credit]****Machine Design and Practice**

The design of mechanical machine elements is studied from theoretical and practical points of view. Topics covered include: design factors, fatigue, and discrete machine elements. Problem analysis emphasizes the application to practical mechanical engineering problems. Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2001 and MAAE 3202.

Lectures three hours a week, problem analysis three hours a week.

MECH 3310 [0.5 credit]**Biofluid Mechanics**

Applications of fundamental fluid mechanics to human circulatory and respiratory systems. Basic viscous flow theory including: blood flow in the heart and large arteries, air flow in extra-thoracic (nose-mouth throat) airways and lungs.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 2004 and MAAE 2300.

Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 3700 [0.5 credit]**Principles of Manufacturing**

Manufacturing processes, materials. Casting: solidification and heat flow theory, defect formation, casting design. Metal forming: elementary plasticity theory, plastic failure criteria, force and work calculations. Bulk and sheet forming. Joining: heat flow and defect formation, residual stresses. Machining theory and methods. Hardening: diffusion, wear resistance.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2700.

Lectures three hours a week, problem analysis and laboratories three hours a week on alternate weeks.

MECH 3710 [0.5 credit]**Biomaterials**

Materials used in biomedical applications: metals, polymers, ceramics and composites. Material response and degradation. Properties of biologic materials; bone, cartilage, soft tissue. Materials selection for biocompatibility.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2700.

Lectures three hours per week, laboratories and problem analysis three hours per week.

MECH 4003 [0.5 credit]**Mechanical Systems Design**

Design of mechanical systems: establishing design criteria, conceptual design, design economics, value analysis, synthesis and optimization. Mechanical elements/systems: gear and flexible drive systems, fluid power systems. These elements are utilized in group design projects.

Includes: Experiential Learning Activity

Prerequisite(s): MECH 3002 and fourth-year status in Engineering.

Lectures three hours a week, problem analysis three hours a week.

MECH 4006 [0.5 credit]**Vehicle Engineering I**

The course emphasizes the engineering and design principles of road transport vehicles. Topics to be covered include: performance characteristics, handling behaviour and ride quality of road vehicles.

Prerequisite(s): MAAE 3004 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4007 [0.5 credit]**Vehicle Engineering II**

Engineering and design principles of off-road vehicles and air cushion technology. Topics include: mechanics of vehicle-terrain interaction - terramechanics, performance characteristics of off-road vehicles, steering of tracked vehicles, air cushion systems and their performance, applications of air cushion technology to transportation.

Prerequisite(s): MAAE 3004 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4013 [0.5 credit]**Biomedical Device Design**

Medical Devices: the industry and its regulation. Design methodologies. Examination of specific medical devices: surgical equipment, orthopedic devices, rehabilitation engineering, life support, artificial organs. Case studies.

Includes: Experiential Learning Activity

Prerequisite(s): MECH 3710, MAAE 3202, and

MECH 4210 and fourth-year status in Engineering.

Lectures three hours per week, laboratories or tutorial three hours per week.

MECH 4101 [0.5 credit]**Mechanics of Deformable Solids**

Course extends the student's ability in design and stress analysis. Topics include: introductory continuum mechanics, theory of elasticity, stress function approach, Lamé and Mitchell problems, stress concentrations, thermoelasticity and plasticity.

Prerequisite(s): MAAE 3202 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4102 [0.5 credit]**Corrosion and Corrosion Control**

Introduction to corrosion. Corrosion mechanisms. Thermodynamics of corrosion. Electro-chemical kinetics of corrosion. Corrosion: types, prevention, control, testing, monitoring and inspection techniques. Corrosion in specific metals (eg. Fe, Ni, Ti and Al). Corrosion issues in specific industries: power generation and chemical processing industries.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4103 [0.5 credit]**Fatigue and Fracture Analysis**

Elastic and elasto-plastic fracture mechanics. Fatigue design methods, fatigue crack initiation and growth Paris law and strain-life methods. Fatigue testing, scatter, mean stress effects and notches. Welded and built up structures, real load histories and corrosion fatigue. Damage tolerant design and fracture control plans.

Prerequisite(s): MAAE 3202 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4104 [0.5 credit]**Vibration Analysis**

Free and forced vibrations of one and two degree-of-freedom systems. Vibration measurement and isolation. Numerical methods for multi-degree-of-freedom systems. Modal analysis techniques. Dynamic vibration absorbers. Shaft whirling. Vibration of continuous systems: bars, plates, beams and shafts. Energy methods. Holzer method.

Prerequisite(s): MAAE 3004 and fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

MECH 4105 [0.5 credit]**Introduction to Nuclear Engineering**

Atomic theory, nuclear physics, radioactivity, photoelectric effect, mass defect, binding energy, nuclides, neutron diffusion and moderation. Reactor theory, kinetics, control. Reactor types, reactor poisoning, xenon oscillations.

Reactor materials, corrosion, fuel and fuel cycle.

Nuclear medicine. Radiation protection, reactor safety fundamentals.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4106 [0.5 credit]**Nuclear Power Plant Design**

Elements of design, basic design, and new generation of nuclear reactors. Major systems of CANDU reactor and its safety principles. Balance of Plant Systems. Licensing requirements for design (IAEA, CNSC and USNRC regulations). Analytical/computer codes in safety assessments and design.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

MECH 4107 [0.5 credit]**Internal Combustion Engines**

This course explores the design process of an internal combustion engine including: Internal Aerodynamics, Combustion, Rotating and Reciprocating Components, Structures, Control Systems, Manufacturing and Testing Methods. Students will design/optimize an engine component utilizing industry standard Ricardo Wave simulation software.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Lecture three hours per week.

MECH 4210 [0.5 credit]**Biomechanics**

The biomechanics of biological systems; muscles and movement, nerves and motor control. Measurements of motion, strain and neural signals. The hand and manipulation; locomotion and the leg.

Includes: Experiential Learning Activity

Prerequisite(s): MAAE 2101 and fourth-year status in Engineering.

Lectures three hours per week, laboratories or tutorials three hours per week.

MECH 4305 [0.5 credit]**Fluid Machinery**

Types of machines. Similarity: performance parameters; characteristics; cavitation. Velocity triangles. Euler equation: impulse and reaction. Radial pumps and compressors: analysis, design and operation. Axial pumps and compressors: cascade and blade-element methods; staging; off-design performance; stall and surge. Axial turbines. Current design practice.

Prerequisite(s): (MAAE 3300 or MECH 3310) and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4401 [0.5 credit]**Power Plant Analysis**

Criteria of merit; selection of power plant for transportation and power generation applications; interrelation among mechanical, thermodynamic and aerodynamic design processes; jet propulsion, turbojets and turbofans; alternative proposals for vehicular power plant; combined cycle applications.

Precludes additional credit for AERO 4402.

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4403 [0.5 credit]**Power Generation Systems**

Energy sources and resources. Basic elements of power generation. Hydro-electric, fossil-fuel, fissile-fuel power plants. Geothermal, solar and wind power plants. Economic and environmental considerations. Energy storage. Future power needs.

Includes: Experiential Learning Activity

Precludes additional credit for SREE 4001.

Prerequisite(s): MAAE 2300 and MAAE 2400 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week and problem analysis three hours per week.

MECH 4406 [0.5 credit]**Heat Transfer**

Mechanisms of heat transfer: fundamentals and solutions. Steady and transient conduction: solution and numerical and electrical analog techniques. Convective heat transfer: free and forced convection for laminar and turbulent flows; heat exchangers. Heat transfer between black and grey surfaces, radiation shields, gas radiation, radiation interchange.

Precludes additional credit for AERO 4446.

Prerequisite(s): MAAE 2400 and (MAAE 3300, MECH 3310, or (ENVE 3001 and permission of the Department of Mechanical and Aerospace Engineering)) and fourth-year status in Engineering.

Lectures three hours a week. Problem analysis and laboratories three hours a week.

MECH 4407 [0.5 credit]**Heating and Air Conditioning**

Environmental demands for residential, commercial and industrial systems. Methods of altering and controlling environment. Air distribution. Refrigeration methods, equipment and controls. Integrated year-round air-conditioning and heating systems; heat pumps. Cooling load and air-conditioning calculations. Thermal radiation control. Component matching. System analysis and design.

Prerequisite(s): MAAE 2400 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4408 [0.5 credit]**Thermofluids and Energy Systems Design**

Integration of fluid mechanics, thermodynamics, and heat transfer for design of energy conversion systems. Chemical kinetics and mass transfer. Efficient combustion, fuel cells and batteries. Efficient operation and design of engines, power generators, boilers, furnaces, incinerators, and co-generation systems. Emerging energy systems.

Prerequisite(s): MAAE 3400 and fourth-year status in Engineering.

Lectures three hours per week.

MECH 4501 [0.5 credit]**State Space Modeling and Control**

Review of matrices. Geometric structure and dynamics of linear systems. Controllability and observability. Pole placement design of controllers and observers. Design of regulator and servo systems. Transmission zeros. Eigenstructure assignment. Relationship to frequency or classical control techniques. Computer solutions using MATLAB. Applications.

Precludes additional credit for SYSC 5502.

Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4503 [0.5 credit]**An Introduction to Robotics**

History of robotics and typical applications. Robotic actuators and sensors. Kinematics of manipulators, inverse kinematics, differential relationships and the Jacobian. Manipulator dynamics. Trajectory generation and path planning. Robot control and performance evaluation. Force control and compliance. Applications in manufacturing and other industries.

Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4604 [0.5 credit]**Finite Element Methods**

Finite element methodology with emphasis on applications to stress analysis, heat transfer and fluid flow using the simplest one- and two-dimensional elements. Direct equilibrium, variational and Galerkin formulations. Computer programs and practical applications. Higher order elements.

Prerequisite(s): MAAE 3202 and fourth-year status in Engineering or by permission of department.

Lectures three hours a week.

MECH 4704 [0.5 credit]**Integrated Manufacturing - CIMS**

Overview of the topics essential to CIMS including integration of design and assembly techniques, numerical analysis, statistical process control and related production technologies within the manufacturing enterprise.

Prerequisite(s): Fourth-year status in Engineering or by permission of the department.

Also offered at the graduate level, with different requirements, as MECH 5704, for which additional credit is precluded.

Lectures three hours a week.

MECH 4705 [0.5 credit]**CAD/CAM**

Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed.

Prerequisite(s): MAAE 2001 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4805 [0.5 credit]**Measurement and Data Systems**

Experimental data, accuracy and uncertainty analysis. Analog systems. Sensors. Signal conditioning. Op-Amps, instrumentation amplifiers, charge amplifiers, filters. Digital techniques. Encoders, A/D D/A converters. Data acquisition using microcomputers. Hardware and software considerations. Interfacing. Applications to measurement of motion, strain, force/torque, pressure, fluid flow, temperature.

Precludes additional credit for ELEC 4805.

Prerequisite(s): ECOR 2050 and fourth-year status in Engineering or by permission of the department.

Lectures three hours a week.

MECH 4806 [0.5 credit]**Mechatronics**

Introduction to the integration of mechanical, electronic and software components to build mechatronic devices. Mechanical and electrical systems modeling, simulation and implementation. Basic automation and computer requirements. Design tools and examples of mechatronic applications.

Prerequisite(s): (MAAE 3500 or SYSC 4505) and fourth-year status in Engineering or by permission of the department.

Lectures three hours per week.

Mechanical and Aerospace Engineering (MAAE)

Mechanical and Aerospace Engineering (MAAE) Courses

MAAE 2001 [0.5 credit]**Engineering Graphical Design**

Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Assignments will make extensive use of Computer-Aided Design (CAD) and will include the production of detail and assembly drawings from actual physical models.

Includes: Experiential Learning Activity

Also listed as AERO 2001.

Prerequisite(s): Second-year status in Engineering.

Lectures and tutorials two hours a week, laboratory four hours a week.

MAAE 2101 [0.5 credit]**Engineering Dynamics**

Review of kinematics and kinetics of particles: rectilinear and curvilinear motions; Newton's second law; energy and momentum methods. Kinematics and kinetics of rigid bodies: plane motion of rigid bodies; forces and accelerations; energy and momentum methods. Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2101.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis three hours a week.

MAAE 2202 [0.5 credit]**Mechanics of Solids I**

Review of Principles of Statics; friction problems; Concepts of stress and strain at a point; statically determinate and indeterminate stress systems; torsion of circular sections; bending moment and shear force diagrams; stresses and deflections in bending; buckling instability. Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2200.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 2300 [0.5 credit]**Fluid Mechanics I**

Fluid properties. Units. Kinematics, dynamics of fluid motion: concepts of streamline, control volume, steady and one-dimensional flows; continuity, Euler, Bernoulli, steady flow energy, momentum, moment of momentum equations; applications. Fluid statics; pressure distribution in fluid at rest; hydrostatic forces on plane and curved surfaces; buoyancy. Includes: Experiential Learning Activity
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2400 [0.5 credit]**Thermodynamics and Heat Transfer**

Basic concepts of thermodynamics: temperature, work, heat, internal energy and enthalpy. First law for closed and steady-flow open systems. Thermodynamic properties of pure substances; changes of phase; equation of state. Second law: entropy. Simple power and refrigeration cycles. Introduction to heat transfer: conduction, convection, radiation. Includes: Experiential Learning Activity
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2700 [0.5 credit]**Engineering Materials**

Materials (metals, alloys, polymers) in engineering service; relationship of interatomic bonding, crystal structure and defect structure (vacancies, dislocations) to material properties; polymers, phase diagrams and alloys; microstructure control (heat treatment) and mechanical properties; material failure; corrosion. Includes: Experiential Learning Activity
Precludes additional credit for CIVE 2700.
Prerequisite(s): Second-year status in Engineering.
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3004 [0.5 credit]**Dynamics of Machinery**

Kinematic and dynamic analysis of mechanisms and machines. Mechanism force analysis. Static and dynamic balancing. Kinematic and dynamic analysis of cams. Free and forced vibration of single-degree-of-freedom systems. Introduction to multibody dynamics. Includes: Experiential Learning Activity
Prerequisite(s): MAAE 2101 and MATH 1005.
Lectures three hours a week, problem analysis and laboratories two hours a week.

MAAE 3202 [0.5 credit]**Mechanics of Solids II**

Stress and strain transformations: torsion of non-circular sections; unsymmetric bending and shear centre; energy methods; complex stresses and criteria of yielding; elementary theory of elasticity; axisymmetric deformations. Includes: Experiential Learning Activity
Precludes additional credit for CIVE 3202.
Prerequisite(s): MAAE 2202 and MATH 1005 (co-req).
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3300 [0.5 credit]**Fluid Mechanics II**

Review of control volume analysis. Dimensional analysis and similitude. Compressible flow: isentropic flow relations, flow in ducts and nozzles, effects of friction and heat transfer, normal and oblique shocks, two-dimensional isentropic expansion. Viscous flow theory: hydrodynamic lubrication and introduction to boundary layers. Includes: Experiential Learning Activity
Prerequisite(s): MATH 2004 and MAAE 2300.
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3400 [0.5 credit]**Applied Thermodynamics**

Gas and vapour power cycles: reheat, regeneration, combined gas/vapour cycles, cogeneration. Heat pump and refrigeration cycles: vapour compression cycles, absorption refrigeration and gas refrigeration. Mixtures of perfect gases and vapours: psychometry and combustion. Principles of turbomachinery.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005 and MAAE 2400.

Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3500 [0.5 credit]**Feedback Control Systems**

Introduction to the linear feedback control. Analysis and design of classical control systems. Stability and the Routh-Hurwitz criteria. Time and frequency domain performance criteria, robustness and sensitivity. Root locus, Bode and Nyquist design techniques. Control system components and industrial process automation.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 4500 (no longer offered), SYSC 4505.

Prerequisite(s): MATH 3705 and (SYSC 3600 or SYSC 3610).

Lectures three hours a week, problem analysis and laboratories three hours a week.

MAAE 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

MAAE 4102 [0.5 credit]**Materials: Strength and Fracture**

Analysis and prevention of failures in metals; plasticity analysis and plastic collapse; micro-mechanisms of fracture, conditions leading to crack growth and transition temperature effects, fracture mechanics, fatigue, environmentally assisted cracking, non-destructive evaluation and testing.

Prerequisite(s): MAAE 2202 and MAAE 2700 and fourth-year status in Engineering.

Lectures three hours a week.

MAAE 4902 [0.5 credit]**Special Topics: Mechanical and Aerospace Engineering**

Selected advanced topics of interest to Aerospace and Mechanical Engineering students, subject to the discretion of the Faculty of Engineering and Design.

Prerequisite(s): permission of the Department.

Lecture three hours a week.

MAAE 4903 [0.5 credit]**Special Topics: Mech & Aero Eng.**

At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.

Prerequisite(s): permission of the Department.

Lecture three hours a week.

MAAE 4904 [0.5 credit]**Special Topics: Mechanical and Aerospace Engineering**

Selected advanced topics of interest to Aerospace and Mechanical Engineering students, subject to the discretion of the Faculty of Engineering and Design.

Prerequisite(s): permission of department.

Lectures three hours a week.

MAAE 4906 [0.5 credit]**Special Topics: Mech and Aero Eng.**

At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.

Prerequisite(s): permission of the Department.

MAAE 4907 [1.0 credit]**Engineering Design Project**

Team project in the design of an aerospace, biomedical, mechanical, or sustainable energy system. Opportunity to develop initiative, engineering judgement, self-reliance, and creativity in a team environment. Results submitted in a comprehensive report as well as through formal oral presentations.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year status in engineering and (completion of or concurrent registration in AERO 4003, AERO 4842, MECH 4003, MECH 4013, or SREE 4001, or permission of Department). Certain projects may have additional prerequisites.

MAAE 4917 [0.5 credit]**Undergraduate Directed Study**

Study, analysis, and solution of an engineering problem. Results presented in the form of a written report. Carried out under the close supervision of a faculty member.

Intended for students interested in pursuing graduate studies. Requires supervising faculty member and proposal from student.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Department and completion of, or concurrent registration in, MAAE 4907.

Media Production and Design (MPAD)

Media Production and Design (MPAD) Courses**MPAD 1001 [0.5 credit]****Introduction to Storytelling: The Context**

Theories, origins and evolution of story within society as the digital age shapes the way we construct and consume narratives. How stories are conceived through words, sound and images, and how they resonate with and influence audiences.

Lectures three hours a week.

MPAD 1002 [0.5 credit]**Introduction to Storytelling: The Practice**

Finding and telling stories in engaging ways using text and basic images. Assignments build basic skills in research, interviewing, writing, storytelling, editing and ethics. How to structure and pitch for publication.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1001.

Workshop three hours a week.

MPAD 2001 [0.5 credit]**Basics of Visual Communication I**

Introduction to visual storytelling through video. Students develop editorial and technical skills to produce video stories that include scripting to images. Students will also learn the basics of video shooting on a range of equipment as well as basic video editing skills.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1002.

Workshop three hours a week.

MPAD 2002 [0.5 credit]**Basics of Visual Communication II**

This course expands from video theory and practice to still photography and multimedia projects, with emphasis on hands-on work with a theoretical underpinning, giving students the practical and technical skills to tell stories in multiple formats.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2001.

Workshop three hours a week.

MPAD 2003 [0.5 credit]**Introductory Data Storytelling**

Governments use data for tracking. Numbers guide public policy and can become powerful and important stories. Students will gain a theoretical understanding of the promise and pitfalls of data availability alongside the practical skills needed for powerful data-based storytelling.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1002.

Workshop three hours a week.

MPAD 2004 [0.5 credit]**Writing for Media**

This course tests student baseline skills, then develops writing capabilities tailored to specific media formats. Coursework is based on the principle that the best way to improve technique is through regular writing and timely constructive critiques.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 1002.

Workshop three hours a week.

MPAD 2501 [0.5 credit]**Media Law**

A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. Also listed as COMS 2501, JOUR 2501.

Prerequisite(s): Second-year standing in the Bachelor of Media Production and Design program.

Lectures three hours a week.

MPAD 3000 [0.5 credit]**Directed Studies**

Directed Studies on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.

Unscheduled.

MPAD 3001 [0.5 credit]**Storytelling and Social Media**

Social media in storytelling. Theory-based lectures, hands-on course modules, discussions and presentations. Students will learn tactics to apply social media for research, gathering information, finding contacts and promoting their own work.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2004.

Lecture three hours a week.

MPAD 3002 [0.5 credit]**Civic Engagement and Public Institutions I**

Expert sources from Canadian institutions discuss covering the economy, justice, environment and security. How public policy is made, the role of the public and how the media analyze information, develop ideas, and produce stories.

Prerequisite(s): third-year standing in the Bachelor of Media Production and Design or the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.

Lectures three hours a week.

MPAD 3003 [0.5 credit]**Civic Engagement and Public Institutions II: Minor Design Project**

Group work building on the fall term course. Production of a public institutions mini-project involving the various development stages that will be employed in the final year capstone project, including the creation of a detailed design document to guide group projects.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 3002.

Workshop three hours a week.

MPAD 3300 [0.5 credit]**Media Ethics in a Digital World**

An examination of ethical issues relating to production of news and other forms of information content, particularly as they relate to digital environments. Discussion of various approaches to ethical decision-making, application in contemporary settings.

Also listed as JOUR 3300.

Prerequisite(s): MPAD 2501.

Lectures three hours a week.

MPAD 3501 [0.5 credit]**Internet and Big Data Law**

The legal use of big data to create content and analyze information. Who owns data; privacy and security implications within a legal landscape fraught with legal concerns and policy challenges.

Prerequisite(s): JOUR 2501 or MPAD 2501 and third-year standing in the Bachelor of Media Production and Design or in the Bachelor of Journalism, or third-year standing and enrollment in the Minor in News Media and Information.

Lectures three hours a week.

MPAD 3600 [0.5 credit]**Special Topic**

Examination of a topic in storytelling and media not covered in depth in other courses.

Prerequisite(s): third-year standing in the Bachelor of Media Production and Design program.

Lecture three hours a week.

MPAD 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2002.

MPAD 4000 [1.0 credit]**Capstone Project**

Student groups develop a capstone project beginning with story development and planning, completion of a story design document including project description, research, key vistas and sketches or storyboards. Group presentations leading to final media project at the end of second term.

Includes: Experiential Learning Activity

Prerequisite(s): MPAD 2002, MPAD 3003, ITEC 2100, ITEC 2400 and fourth-year standing in the Bachelor of Media Production and Design program.

MPAD 4001 [0.5 credit]**Media Industries Now and Next**

Changes in the media, the public's relationship with the media and how journalists, news organizations and other media players respond. Practical issues and challenges in the professional life of an information producer.

Also listed as JOUR 4001.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Lectures and discussions three hours a week.

MPAD 4200 [0.5 credit]**Freelance Media Survival Skills**

Preparation for freelancing to publications and production houses. Resumes, finding potential buyers, interviews, establishing and marketing an individual as a business, accounting and management and dealing with taxes and benefits. Pitching stories, ideas and services.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Lectures three hours a week.

MPAD 4300 [0.5 credit]**Special Topic**

Students will choose a topic from a list of journalism options, to be announced each year.

Also listed as JOUR 4300.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4400 [0.5 credit]**Directed Studies**

Directed study on select topics. Students interested in pursuing this course need to contact a faculty member to discuss a proposed directed study.

Prerequisite(s): Third year standing in Media Production and Design or permission from the School of Journalism and Communication.

Unscheduled.

MPAD 4500 [0.5 credit]**Special Topic**

Examination of a topic in storytelling and media not covered in depth in other courses.

Also listed as JOUR 4500.

Prerequisite(s): Fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4501 [0.5 credit]**Gender, Identity and Inequality**

How social concepts of gender, identity and inequality influence journalism. Theoretical and textual analysis.

Historical and contemporary case studies from mainstream and alternative media exploring journalistic expression, professional practices, status and expectations, and cultural representations.

Includes: Experiential Learning Activity

Also listed as JOUR 4501.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4502 [0.5 credit]**Journalism and Conflict**

For as long as there has been conflict between peoples, there have been those who bear witness and recount their observations. This course examines journalism and conflict with an emphasis on journalistic perspectives but also through discussion of interdisciplinary literature and academic research.

Includes: Experiential Learning Activity

Also listed as JOUR 4502.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4503 [0.5 credit]**Journalism, Indigenous Peoples and Canada**

Students will explore how journalism in Canada has been associated with colonialism, be challenged to confront misrepresentation in the news media, and learn to consider new strategies and ethical frameworks for covering Indigenous people in the era of reconciliation.

Includes: Experiential Learning Activity

Also listed as JOUR 4503.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

MPAD 4504 [0.5 credit]**The Media and International Development**

A critical examination of the use of journalism as an instrument of international development, historically and currently. To what extent have these efforts been successful? On what grounds are they justified? In what regard have they been instruments of propaganda.

Includes: Experiential Learning Activity

Also listed as JOUR 4504.

Prerequisite(s): fourth-year standing in the Bachelor of Media Production and Design program.

Seminar three hours a week.

Medieval and Early Modern Studies (MEMS)

Medieval and Early Modern Studies (MEMS) Courses

MEMS 2001 [0.5 credit]**Discovering the Medieval and Early Modern Past**

An introduction to the Late Antique, Medieval and Early Modern worlds. Organized thematically, students will be introduced to interdisciplinary exploration of core topics.

Prerequisite(s): second-year standing.

Lectures and discussion groups three hours a week.

MEMS 3001 [0.5 credit]**Researching the Medieval and Early Modern Past**

Continued interdisciplinary study of the Late Antique, Medieval and Early Modern worlds, with a focus on how to develop a deeper analysis of the core topics examined in MEMS 2001.

Prerequisite(s): MEMS 2001, or permission of the Program Coordinator.

Lectures three hours a week.

Migration and Diaspora Studies (MGDS)

Migration and Diaspora Studies (MGDS) Courses**MGDS 2000 [0.5 credit]****Global Migration and Transnationalism**

Introduction to the social, cultural, economic and political implications of the movement of people with a multidisciplinary and multiscale approach to topics such as migration and immigration, diaspora identities, global culture, and transnationalism.

Prerequisite(s): second-year standing.

Lecture and discussion three hours a week.

MGDS 4900 [0.5 credit]**Special Topics in Migration and Diaspora Studies**

Advanced topics in Migration and Diaspora Studies. Topics vary from term to term.

Prerequisite(s): Fourth-year standing or permission of the department.

Also offered at the graduate level, with different requirements, as MGDS 5900, for which additional credit is precluded.

Seminar three hours a week

Music (MUSI)

Music (MUSI) Courses

Note: the majority of courses are open to non-Majors; students are advised to consult the Discipline. Priority is given to Music students.

MUSI 1000 [0.5 credit]**Introduction to the Study of Music**

Introduction to issues and methods in the study of music. Development of writing and research skills; methodological approaches in all academic areas of music (historical musicology, ethnomusicology, popular music studies, music theory).

Prerequisite(s): first-year enrolment in the B.Mus., B.A. Music or B.A. Hons. Music program.

Lectures three hours a week.

MUSI 1001 [0.5 credit]**A History of Western Classical Music: Medieval to the Present**

Western classical music from the medieval period to the present. Major historical periods (Medieval, Renaissance, Baroque, Classical, Romantic, Modern, Postmodern) are examined through representative music ranging from Gregorian chant to contemporary experimental trends. Lectures three hours a week.

MUSI 1002 [0.5 credit]**Issues in Popular Music**

History of world popular music from the 19th century until the present. Topics may include the growth of the music industry, the impact of technology, stardom, world music, the role of the press, copyright, censorship, and sexuality. Lectures three hours a week.

MUSI 1003 [0.5 credit]**Understanding Music**

Through musical examples drawn from diverse cultures and historical periods, students develop the ability to describe and analyze different aspects of music and deepen their appreciation of music as a cultural experience. No credit for students in B.Mus, B.A. Honours Music or B.A. Music. Lectures three hours a week.

MUSI 1107 [0.5 credit]**Elementary Materials of Music**

An introduction to the rudiments of music and aural training. Successful completion of this course will fulfil the prerequisite for entry into MUSI 1700. Not available to B.Mus. students for credit. Lectures three hours a week.

MUSI 1700 [0.5 credit]**Theoretical Studies: Foundations of Music Theory**

An introduction to the organizational principles underlying tonal music including intervals, scales, rhythm, metre, chords, counterpoint, form, cadences, and harmonic progressions.

Prerequisite(s): permission of the Discipline.

Lectures three hours a week.

MUSI 1701 [0.5 credit]**Theoretical Studies: Common Practice I**

A study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period, with emphasis on the development of analytical and written skills of diatonic music.

Prerequisite(s): MUSI 1700 or permission of the Discipline.

Lectures three hours a week.

MUSI 1710 [0.5 credit]**Theoretical Studies: Aural Training I**

A study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Discipline.

Lectures three hours a week.

MUSI 1711 [0.5 credit]**Theoretical Studies: Applied Rhythmic Training I**

A study of the rhythm of selected classical, popular, and world musics, with emphasis on applied performance, movement, and dictation.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Discipline.

Lectures and workshops three hours a week.

MUSI 1900 [0.5 credit]**Performance I**

Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction.

Includes: Experiential Learning Activity

Prerequisite(s): audition and enrolment in the B.Mus. program; first-year standing or permission of the

Discipline.

MUSI 1901 [0.5 credit]**Performance II**

Individual vocal or instrumental instruction in classical, traditional or popular idioms, in addition to individual performances and group class instruction.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1900 and enrolment in the

B.Mus. program; first-year standing or permission of the Discipline.

MUSI 1912 [0.0 credit]**Choral Ensemble I**

Participation in a choral ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program

and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1913 [0.0 credit]**Choral Ensemble II**

A continuation of MUSI 1912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program

and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1914 [0.0 credit]**Instrumental Ensemble I**

Participation in an instrumental ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 1915 [0.0 credit]**Instrumental Ensemble II**

A continuation of MUSI 1914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): first-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2005 [0.5 credit]**Introduction to Jazz History**

A survey of ragtime and jazz from their roots in pre-twentieth-century black music and white music to contemporary jazz idioms, including an examination of New Orleans jazz and Dixieland, swing, bebop, cool jazz, and free jazz.

Precludes additional credit for MUSI 2205.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2006 [0.5 credit]**Popular Musics before 1945**

Selected aspects of the development of Anglo-American popular musics from their roots in the nineteenth century until the shifts and tensions which led to the advent of rock-and-roll and soul in the 1950s. Genres to be examined include blues, country, the sentimental ballad, Broadway music.

Precludes additional credit for MUSI 2203, MUSI 2206, MUSI 2208.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2007 [0.5 credit]**Popular Musics after 1945**

Selected aspects of the development of Anglo-American and world popular musics from the advent of rock 'n' roll and soul to the present. Early rock 'n' roll, British rhythm 'n' blues, Motown, West Coast music, punk, heavy metal, new wave, disco and country.

Precludes additional credit for MUSI 2207, MUSI 2208, MUSI 2209.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2008 [0.5 credit]**Music of the World's Peoples**

A survey of musical traditions from various regions of the world, with an emphasis on the sociocultural contexts in which those musics are created and performed.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 2300.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2009 [0.5 credit]**Music of Asia**

A comparative and analytical study of music in Asia, including India, China, Korea, Indonesia, Japan, and the Arabic world, through an examination of the music, musical instruments and theoretical systems.

Precludes additional credit for MUSI 2301.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2102 [0.5 credit]**Music in an Age of Spectacle, Commerce, and Colonization**

The Baroque (1600-1750) was simultaneously shaped by absolutist regimes, competing religions, and an emerging public sphere. Music and culture from Monteverdi to Bach and Handel are investigated in the contexts of power, (geo)politics, religion, aesthetics, gender, socio-economics, dissemination, genre, and compositional practices.

Precludes additional credit for MUSI 2001.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2103 [0.5 credit]**Music in an Age of Order, Invention, and Revolution**

Peace and revolution, faith and secularism, noble privilege and bourgeois commerce: fundamental contradictions underlying the creative work of Mozart, Haydn, and Beethoven. This course studies their compositions—operas, sacred works, symphonies, chamber music—within the political, social and cultural institutions of their times (ca. 1730-1815).

Precludes additional credit for MUSI 2002.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 2601 [0.5 credit]**Orchestration and Instrumentation**

Introduction to the fundamentals of effective and professional arranging. All aspects of the various instruments of the orchestra and matters having to do with the practicalities of orchestration for both small and large ensembles, and accepted professional standards of score presentation.

Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.

Lecture three hours a week.

MUSI 2602 [0.5 credit]**Composition I**

Introduction to theories and technicalities involved in original creative writing through the preparation of individual assignments; based in the practice of recent music in the Western Classical tradition while allowing for the music of other Western styles and traditions to be addressed.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor. MUSI 2601 is recommended.

Lectures and workshops three hours a week.

MUSI 2605 [0.5 credit]**Choral Conducting**

Introduction to the special stylistic features of choral music from the Renaissance to the present as well as to a variety of practical techniques (vocal production, gesture, conducting patterns, diction, etc.).

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.

Lectures three hours a week.

MUSI 2608 [0.5 credit]**Computer Music I: Fundamentals of Electronic Music Production**

Introduction to the theory and practice of electronic music creation, focusing on audio editing, synthesis, sampling, beat-making, signal processing, and sound design, using a variety of professional-grade software packages.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 2603 (no longer offered).

Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 2609 [0.5 credit]**Computer Music II: Production, Collaboration and Performance**

Computer-based music-making with an emphasis on collaborative approaches and performance-oriented tools and techniques. Introduces practices of remixing, live sound manipulation, preparation of original material for performance, and the use of hardware controllers in live performance and real-time musical collaboration using mobile technologies.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 2603 (no longer offered).

Prerequisite(s): Enrolment in the BMus or BA Music program and second-year standing, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 2700 [0.5 credit]**Theoretical Studies: Common Practice II**

A continuation of the study of the harmonic, melodic, rhythmic and formal structures of music of the common-practice period and early twentieth century, with emphasis on chromaticism and the development of analytical and written skills.

Prerequisite(s): MUSI 1701 or permission of the instructor.

Lectures three hours a week.

MUSI 2701 [0.5 credit]**Theoretical Studies: Popular Music Practice**

A study of the rhythmic, melodic, harmonic and formal structures of popular musics.

Prerequisite(s): MUSI 1700 or permission of the instructor.

Lectures three hours a week.

MUSI 2703 [0.5 credit]**Theoretical Studies VI: Practical Keyboard Skills**

A practical study of rhythm, harmony and melody on the keyboard, with an emphasis on vocal and instrumental accompaniment and the development of improvisation skills in a variety of styles.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1701 and MUSI 1710 and MUSI 1711, or permission of the instructor.

Labs three hours a week.

MUSI 2710 [0.5 credit]**Theoretical Studies: Aural Training II**

A continuation of the study of ear training, sight singing, and basic keyboard skills in relation to classical and popular musics, with emphasis on melodic, harmonic, and formal structures.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1701, MUSI 1710.

Lectures three hours a week.

MUSI 2711 [0.5 credit]**Theoretical Studies: Applied Rhythmic Training II**

A continuation of the study of the rhythm of common-practice and world musics, with emphasis on applied performance, movement, and dictation.

Includes: Experiential Learning Activity

Prerequisite(s): MUSI 1700, MUSI 1711.

Lectures and workshops three hours per week.

MUSI 2900 [0.5 credit]**Performance III**

A continuation of MUSI 1901.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and MUSI 1901 with a C+ or higher, or permission of the Discipline.

MUSI 2901 [0.5 credit]**Performance IV**

A continuation of MUSI 2900.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and MUSI 2900 with a B- or higher, or permission of the Discipline.

MUSI 2912 [0.0 credit]**Choral Ensemble III**

A continuation of MUSI 1913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2913 [0.0 credit]**Choral Ensemble IV**

A continuation of MUSI 2912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 2914 [0.0 credit]**Instrumental Ensemble III**

A continuation of MUSI 1915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week through either the fall or winter term, and participation in concerts.

MUSI 2915 [0.0 credit]**Instrumental Ensemble IV**

A continuation of MUSI 2914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3103 [0.5 credit]**Music in Canada**

Through an examination of many genres and styles including classical, folk, popular, and jazz, this course explores the ways that music participates in shaping complex and often conflicting ideas about nation, place, and identity in Canada.

Precludes additional credit for MUSI 3100 (no longer offered).

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3104 [0.5 credit]**Popular Musics of Canada**

A survey of popular musics in Canada from early colonial times to the present. The course will consider a wide range of musical styles and genres, along with related cultural and historical issues.

Precludes additional credit for MUSI 3100.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3106 [0.5 credit]**Popular Musics of the World**

Through a series of case studies, this course examines the impacts of globalization, colonialism and media in music-making and consumption of popular music practices found around the world.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3107 [0.5 credit]**Classical Indian Music**

An introduction to the history and theory of classical Indian music including ragas, instruments, rhythm and improvisation.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing, or permission of the instructor.

Lectures three hours a week.

MUSI 3108 [0.5 credit]**Musics of the Middle East and North Africa**

An examination of various musics, devotional traditions, and shifting cultural and art movements in the region, resulting from processes of globalization, political change, and technological innovation. Course sessions will include close and critical discussion of selected texts, audio-visual examples, and ethnomusicological documentary films.

Prerequisite(s): second-year standing.

Seminars three hours a week.

MUSI 3200 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 3201 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of musicology, theory or composition. The course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 3205 [0.5 credit]**Specialized Studies**

Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year.

Prerequisite(s): permission of the department, and a minimum GPA of 9.0 in Music.

Individual instruction.

MUSI 3206 [0.5 credit]**Specialized Studies in Performance**

Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year.

Prerequisite(s): permission of the Department, and a minimum CGPA of 9.0 in Music.

Individual instruction.

MUSI 3301 [0.5 credit]**Music and Religion**

An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people's worldviews, identities, and experiences within and outside of their communities.

Also listed as RELI 3301.

Prerequisite(s): second-year standing.

Seminars three hours a week.

MUSI 3302 [0.5 credit]**Music and Gender I**

The role of gender in the theory and practice of music in western and non-western cultures.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3303 [0.5 credit]**Introduction to Music Therapy**

Literature, practice and theory of music therapy. The use of music (improvisation, the voice, and reception) with various populations, including children and adults with special needs, people in long term care, people with neurological disorders, and in palliative care.

Prerequisite(s): second-year standing or permission of the instructor.

Lectures three hours a week.

MUSI 3400 [0.5 credit]**A History of Opera before 1800**

A survey of the development of opera from the beginnings to about 1800. The major monuments of Italian, French, German and English opera, by such composers as Monteverdi, Cavalli, Scarlatti, Purcell, Lully, Gluck, Rameau, Mozart and Haydn.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3401 [0.5 credit]**A History of Opera from 1800 to 1945**

A study of romantic and contemporary opera through an examination of selected works from Weber's *Der Freischütz* to Britten's *Peter Grimes*, including an investigation of national styles from Wagnerian music drama and Italian verismo to Russian realism and German expressionism.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3402 [0.5 credit]**Film Music**

The use of music in film, from the silent era to the present day, studying the techniques, styles and theory of film music through the examination of selected scenes.

Also listed as FILM 3402.

Prerequisite(s): second-year standing.

Lectures three hours a week, screening two hours a week.

MUSI 3403 [0.5 credit]**Music Industries**

An introduction to the structure and history of the music industries.

Also listed as COMS 3404.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3405 [0.5 credit]**Musical Theatre**

A survey of the styles, works, and artists of the musical theatre genre as well as the artistic elements that comprise musical theatre.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3406 [0.5 credit]**Instrumental Music: Music for Orchestra**

Origins and development of orchestral music from its beginnings as an independent form in the 18th century to the present. Major symphonies and symphonic poems by composers like Haydn, Beethoven, Liszt, Brahms, Strauss, and Shostakovich. Brief examination of concerto and ballet music.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3407 [0.5 credit]**Instrumental Music: Chamber Music**

History of chamber music and the cultural contexts within which it rose to prominence in Europe and North America in the 18th, 19th and 20th centuries. Genres by representative composers including the sonata, duos, trios, quartets, quintets, sextets, divertimenti, and works for small chamber orchestra.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3408 [0.5 credit]**Music in an Age of Passion, Imagination, and Iconoclasm**

This course examines European art music of the nineteenth century, a revolutionary period of socio-political change when inspiration, subjectivity, radical idealism, expressive intensity, cultural nationalism, and the primacy of the individual creative voice were held up as primary aesthetic ideals.

Prerequisite(s): Third-year standing or permission of the instructor.

Seminars three hours a week.

MUSI 3409 [0.5 credit]**Music in an Age of Tumult, Innovation, and Pluralism**

A study of western art music of the 20th century. Musical works, compositional techniques and performance practices are examined in the context of musical innovation, social change, political upheaval, and stylistic pluralism in a rapidly changing "modern" world.

Prerequisite(s): Third-year standing or permission of the instructor.

Seminars three hours a week.

MUSI 3602 [0.5 credit]**Composition II**

Designed to enable students to develop abilities in the writing of original music. The study and appreciation of modern and contemporary styles and techniques are encouraged.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 3600 (no longer offered).

Prerequisite(s): MUSI 2601, MUSI 2602, and MUSI 2700, or permission of the instructor.

Lectures, workshops, and individual consultations three hours a week.

MUSI 3603 [0.5 credit]**Computer Music Techniques**

An introduction to the techniques of sound synthesis primarily through practical experience at the digital synthesizer and computer. The basics of machine operations, software and computer applications to composition and synthesis. Enrolment is limited.

Includes: Experiential Learning Activity

Prerequisite(s): Enrolment in the B.Mus or BA Music program and second-year standing and either MUSI 2608 or MUSI 2609, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 3604 [0.5 credit]**Computer Music Projects**

Examination of the various applications of digital equipment through the realization of original projects. Students may focus on studio composition, software development or analytic research. Appropriate compositional techniques and problem solving strategies are also discussed. Enrolment is limited.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing, and either MUSI 2603 (no longer offered) or MUSI 2608 or MUSI 2609, or permission of the instructor.

Lectures three hours a week, plus individual studio time.

MUSI 3605 [0.5 credit]**Instrumental Conducting**

Introduction to the practice of conducting Instrumental music from the Classical era to the present as well as to a variety of practical techniques (rehearsal techniques, gesture, conducting patterns, score study, etc.).

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in the B.Mus. program or permission of the instructor.

MUSI 3606 [0.5 credit]**Live Sound**

Theoretical, practical and technical requirements of audio production in live settings are explored through lectures, demonstrations and workshops. Students develop skills in critical listening, pre-production planning, microphone selection and placement, signal routing, audio processing, monitoring and mixing for live event venues. Prior experience not required.

Includes: Experiential Learning Activity

Lectures and workshops three hours a week.

MUSI 3700 [0.5 credit]**Theoretical Studies: Seminar in Theory and Analysis**

Selected topic in music theory. Topics will change yearly and may include: methods of music analysis, analysis of selected works, styles and structures of common practice or post common practice period, music, modal, tonal, or post-tonal counterpoint, history of music theory.

Precludes additional credit for MUSI 3500.

Prerequisite(s): MUSI 2700 or permission of the instructor.

Seminars three hours a week.

MUSI 3701 [0.5 credit]**Theoretical Studies: Jazz Styles and Structures**

Techniques of arranging and composition for small and large ensembles will be studied through the examination of selected works drawn from the jazz repertoire. Works will be selected for stylistic and theoretical analysis, for exercises in aural recognition, and for arranging purposes.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4203 (taken in 1994-95) or MUSI 4204 (taken in 1995-96).

Prerequisite(s): MUSI 2701 or permission of the instructor.

Workshops three hours a week.

MUSI 3702 [0.5 credit]**Introduction to Physics and Psychoacoustics of Music**

Basic topics in physics and psychoacoustics, with an emphasis on those concepts that are most useful for music performance, analysis, composition, and musicology.

Prerequisite(s): second-year standing.

Lectures three hours a week.

MUSI 3703 [0.5 credit]**Improvisation in Theory and Practice**

Selected forms of improvisation from diverse musical and cultural traditions. In addition to weekly seminar meetings, the class will engage in experiential forms of learning by actively improvising in a weekly performance-oriented seminar.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Discussion and performance seminars three hours a week.

MUSI 3900 [0.5 credit]**Performance V**

A continuation of MUSI 2901.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in B. Mus. and MUSI 2901 with a B- or higher, or permission of the Discipline.

MUSI 3901 [0.5 credit]**Performance VI**

A continuation of MUSI 3900.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and MUSI 3900 with a B- or higher, or permission of the Discipline.

MUSI 3912 [0.0 credit]**Choral Ensemble V**

A continuation of MUSI 2913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3913 [0.0 credit]**Choral Ensemble VI**

A continuation of MUSI 3912. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3914 [0.0 credit]**Instrumental Ensemble V**

A continuation of MUSI 2915. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 3915 [0.0 credit]**Instrumental Ensemble VI**

A continuation of MUSI 3914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4000 [0.5 credit]**Performance VII**

This is an optional performance course for B.Mus. students with high academic standing.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4900, MUSI 4901, MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus., MUSI 3901, A- or higher average in second- and third-year MUSI performance courses, and permission of the Music performance supervisor.
Individual instruction.

MUSI 4001 [0.5 credit]**Performance VIII**

This is an optional performance course for B.Mus. students with high academic standing.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4002, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901, MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus. standing, MUSI 4000 with A- or higher, and permission of the Music performance supervisor.
Individual instruction.

MUSI 4002 [0.5 credit]**Graduating Demo Recording**

A graduation recording of substantial duration arranged in consultation with the discipline. A proposal must be submitted one week before the last day for course changes. All recording costs must be borne by the student. Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4001, MUSI 4003, MUSI 4900 (no longer offered), MUSI 4901 (no longer offered), MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with a grade of A- or higher, and permission of both the relevant associate music instructor and the music performance supervisor.
Individual instruction.

MUSI 4003 [0.5 credit]**Graduating Recital**

Public recital arranged in consultation with the Supervisor of Performance and Practical Studies. An outline of the program must be submitted one week before the last day for course changes.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4001, MUSI 4002, MUSI 4900, MUSI 4901, MUSI 4907.

Prerequisite(s): fourth-year standing in B.Mus., MUSI 4000 with A- or higher, and permission of both the relevant associate music instructor and the Music performance supervisor.

Individual instruction.

MUSI 4005 [0.5 credit]**Issues in Jazz Studies**

An examination of key issues in the study of jazz including history/historiography, gender, genre, race, politics, identity and performance.

Prerequisite(s): MUSI 2005 and third-year standing.

MUSI 4006 [0.5 credit]**Issues in the Study of Popular Music**

An introduction to current issues in the study of popular music. The course will be organized around a series of case studies.

Prerequisite(s): third-year standing, MUSI 1002, and at least one of MUSI 2005, 2006, or 2007.

Seminars three hours a week.

MUSI 4007 [0.5 credit]**The Composer in Context**

Examination of the life and music of a selected composer, and the historical, social, cultural, and political factors that shaped the context within which they worked. Focus on history, biography, musical style and analysis.

Prerequisite(s): Fourth-year standing or permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4102 [0.5 credit]**Ethnomusicology in Theory and Practice**

In this course students learn and apply research methods common to ethnomusicological research, developing an individual ethnographic project that draws on critical contemporary theories in ethnomusicology.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, or permission of the instructor.

Seminars three hours a week.

MUSI 4103 [0.5 credit]**Music, Migration and Diaspora in Canada**

Critical analyses of diversity and multiculturalism narratives in Canada and the ways that settler-colonialism influenced and continues to inform music creation and expression. Various case studies examine the diversity of musics found in Canada and the ways that music facilitates belonging and/or exclusion to community.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as MUSI 5015, for which additional credit is precluded.

Seminars three hours a week.

MUSI 4104 [0.5 credit]**First Peoples Music in Canada**

This course examines the role of Indigenous music and musicians in various contemporary issues and priorities for First Peoples in Canada, including political activism, language and cultural maintenance and revitalization, environmental justice and the land, reconciliation and decolonization.

Prerequisite(s): fourth-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as MUSI 5016, for which additional credit is precluded.

Seminars three hours a week.

MUSI 4105 [0.5 credit]**Study of Musics in Africa**

This course explores musics in Africa, engaging with issues of colonialism, ownership and copyright, politics and protest, social change, and global relationships.

Prerequisite(s): third year standing, or permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4200 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. The course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4201 [0.5 credit]**Special Topics**

Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. Course offerings change from year to year.

Prerequisite(s): permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4205 [0.5 credit]**Specialized Studies**

Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology, or composition. Course offerings change from year to year.

Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.

Individual instruction.

MUSI 4206 [0.5 credit]**Specialized Studies in Performance**

Courses designed for Music Honours students who have acquired an extensive background through performance. Course offerings change from year to year.

Prerequisite(s): permission of the department, and a minimum CGPA of 9.0 in Music.

Individual instruction.

MUSI 4209 [1.0 credit]**Specialized Studies**

A course designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. Course offerings change from year to year.

Prerequisite(s): permission of the instructor.

MUSI 4303 [0.5 credit]**Music and Gender II**

The relationship between the social and formal organization of music and the social and formal organization of sexual difference. The role of music in the social construction of gender; the role of gender in the determination of musical style and taste.

Precludes additional credit for MUSI 3303 or MUSI 4204 (taken in 1992-93).

Prerequisite(s): MUSI 3302 or permission of the instructor.

Seminars three hours a week.

MUSI 4304 [0.5 credit]**Music and Globalization**

Examining music's role in the multifaceted and complex processes of globalization. Drawing on case studies of "world musics", this course explores how sound and music negotiate histories of post/colonialism, cultural and economic imperialism, and constructions of sameness and difference in "world music" contexts.

Prerequisite(s): fourth-year standing or permission of the instructor.

Also offered at the graduate level, with different requirements, as MUSI 5017, for which additional credit is precluded.

Seminars three hours a week.

MUSI 4306 [0.5 credit]**Music and Wellbeing in a Global Context**

An examination of the ways in which music contributes to mental, social and physical wellbeing throughout the world, drawing from the fields of neuroscience, medical ethnomusicology, community music and cross-cultural studies.

Prerequisite(s): fourth-year standing or permission of the instructor.

Seminar three hours a week.

MUSI 4307 [0.5 credit]**Music in an Age of Power, Plague, and Courtly Love**

The music of the "dark ages" is illuminated in the context of politics, spectacle, devotion, celebration, compositional process, manuscript culture, dissemination, musical notation, plague, and courtly love. "Medievalism" is examined as an aesthetic of the era (ca. 400-1400) and as reinterpreted in our modern world.

Prerequisite(s): Fourth-year standing or permission of the instructor.

Seminar three hours a week.

MUSI 4308 [0.5 credit]**Music in an Age of Devotion, Seduction, and Rebirth**

This course brings to life the Renaissance (1400-1600), when music played a vital role in lavish courts, grand cathedrals, and vibrant cities. Madrigals, masses, and motets are examined in the context of politics, religion, gender, manuscript and print culture, rhetoric, art, and architecture.

Prerequisite(s): Fourth-year standing or permission of the instructor.

Seminar three hours a week.

MUSI 4602 [0.5 credit]**Composition III**

A continuation of MUSI 3602, focusing on the development of creative individual approaches to music composition.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 3600 (no longer offered).

Prerequisite(s): MUSI 3602, or permission of the instructor.

Lectures, workshops, and individual consultations three hours a week.

MUSI 4700 [0.5 credit]**Theoretical Studies: Advanced Seminar in Theory and Analysis**

A study of a selected topic in music theory. Topics will change yearly and may include: methods of music analysis; analysis of selected works; styles and structures of common practice or post common practice period music; modal, tonal, or post-tonal counterpoint; history of music theory.

Prerequisite(s): MUSI 2700 or permission of the instructor.

Seminars three hours a week.

MUSI 4701 [0.5 credit]**Introduction to Jazz Arranging**

The art of arranging for small and large jazz ensembles is introduced through analysis of recordings by artists such as Duke Ellington, Fletcher Henderson, Count Basie, Rob McConnell, and Maria Schneider. Topics may include 2-, 3-, and 4-voice writing in a jazz idiom.

Prerequisite(s): MUSI 3701 or permission of the instructor.

Seminars three hours a week.

MUSI 4702 [0.5 credit]**Topics in Music Perception and Cognition**

Selected advanced topics in the perception and cognition of music. Where appropriate, emphasis will be placed upon areas of overlap between psychological research and issues in aesthetics and cultural theory.

Prerequisite(s): third-year standing and MUSI 3702, or permission of the department.

Seminars three hours a week.

MUSI 4704 [0.5 credit]**Tonal Counterpoint**

This course deals with the development of writing skills and knowledge of counterpoint as manifest in the Baroque era. Topics may include invention, canon, fugue, dance forms, the compositional language of J. S. Bach, and contrapuntal techniques in the late 18th century and beyond.

Prerequisite(s): MUSI 2700, or permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4705 [0.5 credit]**Post-Tonal Theory and Analysis**

Fundamentals of post-tonal music theory and analysis. Neo-tonal, atonal, twelve-tone and third-stream jazz. Students will develop the critical skills to understand these theoretical tools and be conversant with some of the aesthetic precepts associated with them.

Prerequisite(s): MUSI 2700 or permission of the instructor.

Lectures and seminars three hours a week.

MUSI 4800 [0.5 credit]**Practicum in Music**

Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.

Includes: Experiential Learning Activity

Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4801 [0.5 credit]**Practicum in Music**

Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.

Includes: Experiential Learning Activity

Prerequisite(s): Honours Music registration with third- or fourth-year standing and a B + or better average in Music courses; and permission of the Practica Supervisor.

MUSI 4906 [1.0 credit]**Honours Portfolio in Composition**

The course requires the composition of an original work of substantial proportions, with an accompanying analytical paper. Application to the Discipline for permission to register must be received by September 1.

Includes: Experiential Learning Activity

Precludes additional credit for MUSI 4600.

Prerequisite(s): fourth-year standing, MUSI 3600 and permission of the Discipline.

MUSI 4908 [1.0 credit]**Honours Essay in Musicology**

An Honours research essay of approximately 50 pages.

A written outline of the project must be submitted to the Honours committee changes by the first day of classes.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing, A- or higher average, and permission of the Discipline.

MUSI 4909 [1.0 credit]**Portfolio in New Media**

The course requires the creation of an original work (or works) of substantial proportions using applications in the electronic studios. A high level of independence and originality will be required. Requests to the Discipline for permission to register must be received by September 1.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the instructor.

MUSI 4912 [0.0 credit]**Choral Ensemble VII**

A continuation of MUSI 3913. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4913 [0.0 credit]**Choral Ensemble VIII**

A continuation of MUSI 4912. Registration, but not participation, is restricted to students in the B. Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Choral Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4914 [0.0 credit]**Instrumental Ensemble VII**

A continuation of MUSI 3915. Registration, but not participation, is restricted to students in the B.Mus. program Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term and participation in concerts.

MUSI 4915 [0.0 credit]**Instrumental Ensemble VIII**

A continuation of MUSI 4914. Registration, but not participation, is restricted to students in the B.Mus. program. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.Mus. program and permission of the Ensemble Director.

Ensemble work approximately two hours a week throughout either the fall or winter term participation in concerts.

Natural Science (NSCI)

Natural Science (NSCI) Courses**NSCI 1000 [0.5 credit]****Seminar in Science**

Cross-disciplinary survey of current issues in science, providing new science students with an orientation to the study of science at the university level. Structured around seminars, oral and written presentations.

Prerequisite(s): Restricted to students in the first year of B.Sc. programs or B.A. Biology programs.

Lectures and tutorials three hours a week.

NSCI 2000 [0.5 credit]**Seminar in Science II**

Cross-disciplinary survey of current issues in science, with a focus on applying interdisciplinary approaches to solving scientific problems. Structured around seminars, oral and written presentations. Focus on EDI, community outreach, and experiential learning.

Includes: Experiential Learning Activity

Prerequisite(s): Second year standing in B.Sc. programs or B.A. Biology programs or permission of the Institute.

Lecture, Seminar, or workshops three hours a week

NSCI 4901 [1.0 credit]**Science Journalism Independent Project**

Students will work with a health or life science research group and deliver an in-depth narrative on the relevant scientific research, lab dynamics and results.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Journalism and at least 3.5 credits completed in the concentration in Health Science, or permission of the School of Journalism and Communication.

Neuroscience (NEUR)

Neuroscience (NEUR) Courses**NEUR 1202 [0.5 credit]****Neuroscience of Mental Health and Psychiatric Disease**

Clinical symptoms of psychiatric disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive and anxiety disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, and substance use disorders.

Precludes additional credit for NEUR 1201 (no longer offered).

Lecture three hours a week.

NEUR 1203 [0.5 credit]**Neuroscience of Mental Health and Neurological Disease**

Clinical symptoms of neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson's disease, ALS, chronic pain, Alzheimer's disease and concussion.

Lectures three hours a week.

NEUR 2001 [0.5 credit]**Introduction to Research Methods in Neuroscience**

A general introduction to research process within neuroscience. Topics covered include research strategies, methods, and techniques; basic descriptive statistics; research communication; and responsible scientific conduct.

Precludes additional credit for PSYC 2000 and PSYC 2001.

Prerequisite(s): second-year standing.

Lecture three hours a week.

NEUR 2002 [0.5 credit]**Introduction to Statistics in Neuroscience**

A general introduction to statistical techniques employed within contemporary neuroscience. Topics covered include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square).

Precludes additional credit for ENST 2006, GEOG 2006, PSYC 2002.

Prerequisite(s): PSYC 2001 or NEUR 2001.

Lectures three hours a week, online labs/tutorials.

NEUR 2003 [0.5 credit]**Introduction to Techniques in Neuroscience**

Introduction to common techniques used in neuroscience research. Brain imaging, animal behaviour, electrophysiology, immunohistochemistry and microscopy, genomics, transgenics, cell culture, and DSM-IV-based clinical assessment.

Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.

Lectures three hours a week.

NEUR 2004 [0.5 credit]**Fundamentals of Scientific Writing in Neuroscience**

Introduction to various forms of scientific writing appropriate to neuroscience, with a focus in fundamental skills in scientific writing.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing in a Neuroscience program and one of NEUR 1201, NEUR 1202 or NEUR 1203.

Lectures and workshops three hours a week.

NEUR 2201 [0.5 credit]**Cellular and Molecular Neuroscience**

Core principles in cellular and molecular neuroscience, including signal transmission along and between neurons, ion channels and transporters, intracellular signaling pathways, and regulation of gene expression.

Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered).

Prerequisite(s): Either NEUR 1201 and NEUR 1203, or NEUR 1202 and NEUR 1203, or both BIOL 1103 and BIOL 1104.

Lectures three hours a week, online labs.

NEUR 2202 [0.5 credit]**Neurodevelopment and Plasticity**

Core principles in nervous system development from embryogenesis to plasticity in the adult brain. Topics include neural induction, neurogenesis, apoptosis, neuronal migration and axon growth, synaptogenesis and synaptic pruning both under normal conditions and in psychopathology.

Precludes additional credit for PSYC 3200 (no longer offered) and NEUR 3200 (no longer offered).

Prerequisite(s): NEUR2201.

Lectures three hours a week, online labs.

NEUR 2801 [0.5 credit]**Neuroscience and Creativity**

Abnormal brain function associated with mental illness or substance abuse has been commonly depicted in or been the inspiration for important cultural works including movies, music, paintings and literature. The neurobiological basis of creativity in individuals with and without mental illness.

Prerequisite(s): one of PSYC 1001, NEUR 1201, NEUR 1202 or NEUR 1203.

Lectures and seminars three hours a week.

NEUR 3001 [0.5 credit]**Data Analysis in Neuroscience I**

Introducing various software for analyzing neuroscience data. Dealing with real data, drawing graphs, application of descriptive and inferential statistics through the general linear model, assumptions of parametric tests, robust statistics, confidence intervals, correlations, use of appropriate statistical methods and interpretation of results.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001 and PSYC 2002, or NEUR 2001 and NEUR 2002.

Lectures three hours a week, online labs/workshops.

NEUR 3002 [0.5 credit]**Data Analysis in Neuroscience II**

Use of software for analyzing neuroscience data.

Statistical techniques typically include nonparametric tests, t tests, and various forms of both ANOVA and regression including robust statistical tests, with a focus on the practical application of appropriate statistical methods and interpretation of results.

Includes: Experiential Learning Activity

Prerequisite(s): NEUR 3001.

Lectures three hours a week, online labs/workshops.

NEUR 3203 [0.5 credit]**Field Course in Animal Behaviour**

Offered in the Department of Biology as BIOL 3605. Only those modules dealing with animal behaviour topics may be offered for Neuroscience credit.

Includes: Experiential Learning Activity

Also listed as BIOL 3605.

Precludes additional credit for PSYC 3203.

Prerequisite(s): permission of the department.

NEUR 3204 [0.5 credit]**Neuropharmacology**

Overview of chemical neurotransmission and key neurotransmitter systems. A description of licit and illicit drugs covering topics that range from historical perspectives to pharmacology to mechanisms of action in the brain. Discussion of neurochemical basis of psychiatric diseases including anxiety, depression and schizophrenia. Precludes additional credit for PSYC 3204 (no longer offered).

Prerequisite(s): NEUR 2200 or NEUR 2201.

Lectures and seminars three hours a week.

NEUR 3206 [0.5 credit]**Sensory and Motor Neuroscience**

Exploration of major topics in sensory processing and motor control, with a focus on underlying mechanisms and neurobiological principles. Topics include all sensory systems (such as vision, somatosensation and audition) plus motor system components including lower and upper motor neurons, basal ganglia, and cerebellum.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 3200 (no longer offered), NEUR 3200 (no longer offered), PSYC 3202 (no longer offered) and NEUR 3202 (no longer offered).

Prerequisite(s): NEUR 1201 or both NEUR 1202 and NEUR 1203, and either NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week, laboratory four hours a week.

NEUR 3207 [0.5 credit]**Systems Neuroscience**

Neural systems underlying complex behaviours including emotion, motivation, and sleep, and the role of association cortices in brain function.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 3200 (no longer offered) and PSYC 3200 (no longer offered).

Prerequisite(s): NEUR 3206.

Lectures three hours a week, laboratory four hours a week.

NEUR 3301 [0.5 credit]**Genetics of Mental Health**

Most common mental health diseases have a genetic component. By focusing on specific diseases, this course will discuss how disease susceptibility genes are identified, and describe the genetic, genomic and epigenetic mechanisms through which DNA alterations can predispose to disease.

Prerequisite(s): BIOL 2104 or BIOL 2107, and NEUR 2200 or NEUR 2201.

Lectures three hours a week.

NEUR 3303 [0.5 credit]**The Neuroscience of Consciousness**

Consciousness remains one of the least understood aspects of the nervous system. This course explores neural mechanisms underlying consciousness, changes in consciousness associated with sleep, coma, vegetative states, drugs, and other stimuli, and considers the evolutionary basis of consciousness, and its relationship with awareness.

Prerequisite(s): NEUR 2200 or NEUR 2202.

Lectures three hours a week.

NEUR 3304 [0.5 credit]**Hormones and Behaviour**

The effects of hormones throughout life at all levels of the nervous system. The role of hormones in mediating behaviours that are both basic (feeding, reproduction and social interactions) and complex (motivation, emotion, learning and memory).

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3401 [0.5 credit]**Environmental Toxins and Mental Health**

Exposure to environmental toxins from the air, water or food can interfere with neuronal function, alter neurodevelopment, and damage the brain. This course will explore associations between toxins and diseases such as Parkinson's disease, multiple sclerosis and depression, focusing on mechanisms underlying development of pathology.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3402 [0.5 credit]**Impact of Lifestyle and Social Interactions on Mental Health**

Healthy lifestyle choices and positive social interactions can reduce the incidence of pathological conditions such as depression, obesity, cardiovascular disease and impaired immunity. This course focuses on psychosocial and neurobiological mechanisms that underlie the relationship between lifestyle, social interactions and health.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3403 [0.5 credit]**Stress and Mental Health**

Stressful events can have profound repercussions on physical and psychological well-being. This course examines the psychosocial and biological processes by which stressors predispose to both physical (immune-related disorders, diabetes, heart disease) and psychological (acute stress disorder, posttraumatic stress disorder, depression, anxiety) pathologies.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3501 [0.5 credit]**Neurodegeneration and Aging**

Perspectives on aging and neurodegeneration from psychosocial and neuroscience points of view. How factors including TBI, stroke and alcohol make the brain vulnerable and contribute to neurodegeneration. Clinical overview of Alzheimer's, Parkinson's, Huntington's and ALS and the underlying pathology that differentiates these diseases.

Prerequisite(s): NEUR 2200 or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3502 [0.5 credit]**Neurodevelopmental Determinants of Mental Health**

Development of the human brain, the generation and differentiation of the various cell types, and the formation of the vast network of neural connections. How neurodevelopmental dysregulation can result in pathologies including dyslexia, ADHD, schizophrenia and autism.

Prerequisite(s): NEUR 2200, or both NEUR 2201 and NEUR 2202.

Lectures three hours a week.

NEUR 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

NEUR 4001 [0.5 credit]**Special Topics in Neuroscience**

Each section of NEUR 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of NEUR 4001 but can register in each section only once.

Prerequisite(s): NEUR 3200, or NEUR 3204 and NEUR 3206 and NEUR 3207, or permission of the Department.

Lectures three hours a week.

NEUR 4002 [0.5 credit]**Systematic Reviews and Meta-Analyses**

Introduction to the methods used in conducting systematic reviews and meta-analyses. Topics include: conducting literature searches, extracting relevant literature, assessing quality of studies, synthesizing findings across studies, and the statistical methods used to carry out a meta-analysis.

Includes: Experiential Learning Activity

Prerequisite(s): NEUR 3002 or HLTH 3201 or BIOL 3604 or permission of instructor.

Also offered at the graduate level, with different requirements, as NEUR 5203, for which additional credit is precluded.

Lecture three hours a week.

NEUR 4003 [0.5 credit]**Knowledge Mobilization**

Knowledge mobilization concepts, tools, and frameworks, the challenges and value of translational research, and processes involved in integrated knowledge mobilization. Skills to maximize research impacts will be developed.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing in a Neuroscience program OR permission of the department.

Also offered at the graduate level, with different requirements, as NEUR 5801, for which additional credit is precluded.

Includes: Experiential Learning Activity

NEUR 4200 [0.5 credit]**Seminar on Current Advances in Neuroscience**

Headline research in neuroscience. Topics may include technical and conceptual advances, ethical issues, medical improvement, and social impacts of neuroscience research.

Precludes additional credit for PSYC 4200 (no longer offered).

Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.

Seminar three hours a week.

NEUR 4202 [0.5 credit]**Seminar on Current Research in Neuroscience and Psychiatric Disease**

Recent research in clinical neuroscience including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include depressive disorders, schizophrenia, autism, ADHD, anorexia, narcolepsy, substance abuse, and personality disorders.

Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.

Seminar three hours a week.

NEUR 4203 [0.5 credit]**Seminar on Current Research in Neuroscience and Clinical Neurology**

Recent research in neurological disease, including biological, developmental, experiential and environmental factors that contribute to disease. Topics may include stroke, multiple sclerosis, migraine, seizure disorder, Parkinson's disease, ALS, chronic pain, Alzheimer's disease and concussion.

Prerequisite(s): fourth year standing and one of NEUR 3200, NEUR 3206 or NEUR 3207.

Seminars three hours a week.

NEUR 4301 [0.5 credit]**Neurobiology of Energy Homeostasis**

Focus on neuroanatomical and molecular mechanisms underlying how mammals adapt to changes and challenges in the environment. Topics include regulation of feeding, energy expenditure, water balance, and temperature regulation.

Prerequisite(s): NEUR 3304.

Lectures three hours a week.

NEUR 4302 [0.5 credit]**Sex and the Brain**

Neurobiological processes behind reproductive behaviours in various animal species including humans. Evaluation of data concerning neurobiological differences between sexes, biological determinants of sexual orientation, and relating to neurobiology of sex disorders.

Precludes additional credit for NEUR 3302 (no longer offered).

Prerequisite(s): NEUR 3304.

Lectures three hours a week

NEUR 4303 [0.5 credit]**Indigenous Health & Mental Health**

The physical and mental health issues of Indigenous people in the context of the cultural, environmental, developmental and biological factors that contribute to comorbid conditions and greater risk and resilience.

Prerequisite(s): 3rd year standing or above.

Lectures three hours a week.

NEUR 4305 [0.5 credit]**Immune-Brain Interactions**

Communication between the brain and the immune system; messengers mediating the interaction. How disturbances of immune-brain signaling can lead to disease (multiple sclerosis, Parkinson's) and to changes in mood and cognition.

Precludes additional credit for NEUR 3305 (no longer offered).

Prerequisite(s): NEUR 3200 or NEUR 3207.

Lectures three hours a week.

NEUR 4306 [0.5 credit]**The Neural Basis of Addiction**

How substance and behavioural addictions impact neural function to ultimately lead to the neuropathology of addiction in vulnerable populations. Contemporary neurobiological theories of addiction will also be addressed.

Precludes additional credit for NEUR 3306.

Prerequisite(s): NEUR 3204.

Lecture three hours a week.

NEUR 4600 [0.5 credit]**Advanced Lab in Neuroanatomy**

Advanced experiential learning in neuroanatomy, histology and microscopy.

Includes: Experiential Learning Activity

Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207, fourth-year standing in a Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

NEUR 4801 [0.5 credit]**Neuroethics**

Ethical issues of key importance to current neurobiological research. Topics may include the use of animals in research, stem cell research, genetic diagnosis and gene therapy, neuroimaging, and the effect on identity and autonomy of manipulations such as psychopharmaceuticals and psychosurgery.

Prerequisite(s): NEUR 3200 or both NEUR 3206 and NEUR 3207.

Lectures and seminars three hours a week.

NEUR 4900 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest. Normally students may not offer more than one credit of independent study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth- year standing and permission of the Department.

NEUR 4905 [1.0 credit]**Honours Workshop**

The course will focus on active learning in areas that include written and oral communication, evaluation and interpretation of results, statistics and data management, emphasizing transferable skills that will be most appropriate for non-research career paths.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4906, NEUR 4907 and NEUR 4908.

Prerequisite(s): fourth-year standing in an Honours Neuroscience program and permission of the Department. Lectures and seminars three hours a week, and colloquia three hours a week.

NEUR 4906 [1.0 credit]**Translational Approach to Indigenous Community Wellness**

This course involves co-developing an Indigenous community-led process or product that addresses a current and specific mental health issue. Involves working in interdisciplinary groups with a community partner.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4905, NEUR 4907 and NEUR 4908.

Prerequisite(s): Fourth-year standing with a minimum Major CGPA of 9.0 and a grade of A- or higher in one of NEUR 3401, NEUR 3402 or NEUR 3403 and permission of instructor. Prior completion of NEUR 4303 recommended.

Seminars or workshops three hours a week. A field trip to the partner community is typically required.

NEUR 4907 [1.0 credit]**Honours Essay and Research Proposal**

An independent essay based critical review and research proposal on a topic in neuroscience, using library resources, under the direct supervision of a Faculty advisor. Evaluation is based on a written report.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4905, NEUR 4906 and NEUR 4908.

Prerequisite(s): NEUR 3200, or both NEUR 3206 and NEUR 3207, and fourth-year standing in an Honours Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

Colloquia three hours a week.

NEUR 4908 [1.0 credit]**Honours Research Thesis**

An independent research project undertaken under the direct supervision of a faculty advisor typically from the Department of Neuroscience. Evaluation is based on a written report and poster.

Includes: Experiential Learning Activity

Precludes additional credit for NEUR 4905, NEUR 4906 and NEUR 4907.

Prerequisite(s): NEUR 3200, or both NEUR 3206 and NEUR 3207, and fourth-year standing in an Honours Neuroscience program, a minimum Major CGPA of 9.0 and permission of the Department.

Colloquia three hours a week.

Philosophy (PHIL)

Philosophy (PHIL) Courses**PHIL 1000 [0.5 credit]****Introductory Philosophy: Fields, Figures and Problems**

What is metaphysics? Who was Socrates? What is Freedom? This introduction sketches many branches of philosophy and the important problems associated with each. It introduces great philosophers, present and past, and traces enduring philosophical themes.

Precludes additional credit for FYSM 1208 (no longer offered), FYSM 1211, PHIL 1100. This course is not suitable for students with previous formal study of philosophy.

PHIL 1100 [1.0 credit]**Looking at Philosophy**

Introduction to philosophy: the nature of logical thinking; the existence of God; the objectivity of values; the meaning of life; free will, determinism and responsibility; the relation between mind and body; immortality; the possibility of knowledge. This course is not intended for Majors.

Precludes additional credit for FYSM 1208 (no longer offered), FYSM 1211 and PHIL 1000.

Lectures three hours a week.

PHIL 1200 [0.5 credit]**The Meaning of Life**

An introduction to concerns expressed by the perennial philosophical question, "What is the meaning of life?" Students will be familiarized with the major philosophical approaches to life's meaning through a consideration of various contemporary and late modern works in the philosophy of life.

Lectures three hours a week.

PHIL 1301 [0.5 credit]**Mind, World, and Knowledge**

Introduction to a variety of philosophical works, including contemporary, on such topics as: the nature of being, the mental, the external, consciousness, perception, experience, meaning, truth, the nature of knowledge, scientific understanding, and how language and thought represent the world.

Precludes additional credit for PHIL 1006 (no longer offered), PHIL 1501 (no longer offered).

Lectures three hours per week.

PHIL 1500 [1.0 credit]**Contemporary Moral, Social and Religious Issues**

Moral theories, atheism or theism, feminism, and free will. Moral arguments concerning abortion, affirmative action, racism, human rights, children's rights, world hunger, capital punishment, euthanasia, censorship, pornography, legal paternalism, animal rights and environmental protection.

Precludes additional credit for FYSM 1209 and PHIL 1550.

Lectures three hours a week.

PHIL 1550 [0.5 credit]**Introduction to Ethics and Social Issues**

An introduction to understanding, assessing, and formulating ethical arguments concerning controversial issues. Particular issues studied may include, world hunger, capital punishment, terrorism, euthanasia, abortion, pornography and hate speech, animal rights, the environment, and topics in theories of race, gender and disability.

Precludes additional credit for FYSM 1212 and PHIL 1500.

Lectures three hours a week.

PHIL 1610 [0.5 credit]**Great Philosophical Ideas, Part 1**

Major figures and developments in philosophy from the early Greeks to the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments.

Precludes additional credit for FYSM 1300, PHIL 1600.

Lectures three hours a week.

PHIL 1620 [0.5 credit]**Great Philosophical Ideas, Part 2**

Major figures and developments in philosophy after the year 1400. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments. Precludes additional credit for FYSM 1300, PHIL 1600. Lectures three hours a week.

PHIL 1700 [0.5 credit]**Philosophy of Love and Sex**

A survey of philosophical classics, on themes of romantic love, self-love, altruistic love, sexuality, eroticism and the passion/reason dichotomy, from Plato's Symposium to Foucault's History of Sexuality; and an examination of related contemporary issues in light of these perspectives. Lectures three hours a week.

PHIL 2001 [0.5 credit]**Introduction to Logic**

An introduction to the techniques and philosophical implications of formal logic with emphasis on translation of expressions into symbolic form, testing for logical correctness, the formulation and application of rules of inference, and the relation between logic and language. Open to first-year students. Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2003 [0.5 credit]**Critical Thinking**

Assessment of reasoning and the development of cogent patterns of thinking. Reference to formal logic is minimal. Practice in criticizing examples of reasoning and in formulating one's own reasons correctly and clearly. Open to first-year students. Lectures three hours a week.

PHIL 2005 [1.0 credit]**Ancient Philosophy: The Search for Wisdom**

An exploration of ancient philosophy as a search for wisdom and happiness from its Presocratic beginnings in Greece to its development in the Hellenistic world and Imperial Rome. Emphasis on philosophy as a contemplative activity and as a way of life. Also listed as CLCV 2105. Precludes additional credit for PHIL 2006, CLCV 2006, PHIL 2007, CLCV 2007 (no longer offered). Prerequisite(s): 0.5 credit in PHIL, or second-year standing. Lectures three hours a week.

PHIL 2010 [0.5 credit]**Issues in Theoretical Philosophy**

Issues drawn from epistemology, metaphysics, philosophy of mind, philosophy of language, and related fields will be examined through careful study of significant philosophical texts after 1900, along with some ensuing debates. Prerequisite(s): enrolment in Honours or Combined Honours Philosophy programs, or in philosophy, Ethics, and Public Affairs, or permission of the Department. Lectures and discussion three hours a week.

PHIL 2020 [0.5 credit]**Issues in Practical Philosophy**

Issues drawn from ethics, social and political philosophy, and related fields will be examined through careful study of significant philosophical texts, along with some ensuing debates. Includes: Experiential Learning Activity. Prerequisite(s): enrolment in Honours or Combined Honours Philosophy programs, or in philosophy, Ethics, and Public Affairs, or permission of the Department. Lectures and discussion three hours a week.

PHIL 2101 [0.5 credit]**History of Ethics**

An introduction to ethical theories through a study of some of the major figures in moral philosophy, such as Aristotle, Hume, Kant and Mill. Prerequisite(s): 0.5 credit in philosophy or second-year standing. Lectures three hours a week.

PHIL 2103 [0.5 credit]**Philosophy of Human Rights**

Philosophical introduction to human rights sources, concepts, justifications, consequences, and challenges to them. Evolution of selected human rights as a) demands made in political struggles; b) declarations supported by moral or political principles and arguments; c) codes ratified and implemented by governments and international organizations. Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 2106 [0.5 credit]**Information Ethics**

An exploration of ethical issues that arise in the Age of Information. Topics to be discussed may include technology, surveillance and privacy, social media and privacy, social media and cognitive bias, bias in algorithms, AI ethics, intellectual property, and freedom of expression and assembly. Precludes additional credit for PHIL 2104 (no longer offered). Prerequisite(s): a course in philosophy or second-year standing. Lectures three hours a week.

PHIL 2120 [0.5 credit]**Philosophy of Technology**

Philosophical investigations of the nature of technology and the influence it has on our relationships with others, the natural world, and ourselves. Key themes may include the relation between technology and science and the role of technology in personal identity, social justice, and well-being.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2201 [0.5 credit]**Introduction to Marxist Philosophy**

The evolution of Marx's social and political views in the setting of 18 th - and 19 th - century anarchism, liberalism and conservatism. Themes of humanism, freedom, rights, the state, democracy, alienation, and inequality, primarily as they develop into the theory of historical materialism.

Precludes additional credit for PHIL 2200.

Prerequisite(s): 0.5 credit in philosophy or permission of the Department.

Lectures three hours a week.

PHIL 2202 [0.5 credit]**Topics in Marxist Philosophy**

The dialectical materialism of Marx, Engels, and Lenin is compared with traditional materialist, idealist, and mechanist philosophy. Marxist views on issues such as equality, ethical objectivity, human well-being, matter and mind, the existence of God, knowledge versus skepticism, freedom of the will, and justice.

Precludes additional credit for PHIL 2200.

Prerequisite(s): PHIL 2201 or 0.5 credit in the history of philosophy at the 2000-level or above.

Lectures three hours a week.

PHIL 2301 [0.5 credit]**Introduction to the Philosophy of Science**

Philosophical issues arising out of the attempt to understand the world scientifically. Topics may include: scientific methodology, revolution, observation, explanation, causation, induction, reduction, the difference between natural and social scientific understanding, realism, instrumentalism, constructivism.

Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2306 [0.5 credit]**Philosophy and Feminism**

A study of philosophical issues arising from feminism. The course includes discussions of the historical roots of feminism, the role of reason and emotion, key concepts such as oppression, sexism, equality and difference, feminism and philosophies of race and of disability, and selected moral/political issues.

Prerequisite(s): 0.5 credit in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2307 [0.5 credit]**Gender and Philosophy**

Topics may include gender and sex in the history of philosophy, intersections between the politics and theories of gender, sexuality, and race, the place of the body in philosophical theory, the influence of gender and sex on science/social science, and queer/trans issues and politics.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2320 [0.5 credit]**Children, Literature, and Philosophy**

An exploration of issues at the nexus of philosophy, children's literature, and childhood studies. Topics may include an examination of children's books and young adult literature through a philosophical lens, as well as a critical examination of the "philosophy with children" movement.

Includes: Experiential Learning Activity

Prerequisite(s): 0.5 credit in philosophy or second-year standing in a philosophy program, or permission of the department.

Lectures three hours a week.

PHIL 2330 [0.5 credit]**Happiness, Well-being, and the Good Life**

A philosophical exploration of what makes a good human life. Topics may include the role of happiness, well-being, and flourishing in a good life, the relations between these aspects, and the extent to which they depend on luck and social considerations.

Lectures three hours a week.

PHIL 2340 [0.5 credit]**Philosophy and Popular Culture**

Philosophy is all around us, it permeates culture. This course explores philosophical questions through the lens of popular culture. The material used may include films, shows, music, novels, video games, advertising, comic books, and so on.

Lectures three hours a week.

PHIL 2380 [0.5 credit]**Introduction to Environmental Ethics**

Major questions in environmental ethics: How should human beings view their relationship to the rest of nature? Is responsible stewardship of the environment compatible with current technology? Must future generations be protected? Do animals, other life forms, endangered species, ecosystems and/or the biosphere have value/ rights?.

Precludes additional credit for PHIL 1804.

Lectures three hours a week.

PHIL 2405 [0.5 credit]**Philosophy of the Paranormal**

Examination of claims, concepts, theories and methods in parapsychology. Their scientific character and the relation of paranormal phenomena to philosophical issues such as survival of death, human nature, time, space, causality and perception.

Prerequisite(s): 0.5 credit in philosophy or permission of the Department.

Lectures three hours a week.

PHIL 2408 [0.5 credit]**Bioethics**

Ethical and political issues in medicine, public health, biotechnology, and the life sciences. Topics may include reproductive ethics, research on human subjects, animal research and treatment, justice and health care, physician-patient relationships, death and the end of life, and genetic engineering.

Precludes additional credit for PHIL 3408.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week. Tutorials may be offered in selected terms.

PHIL 2501 [0.5 credit]**Introduction to Philosophy of Mind**

An introduction to major philosophical issues concerning human cognition. Topics may include: the relation of mind to body, knowledge of other minds, the relation of mental states to personhood and personal identity, mental illness, consciousness, intentionality, action, mental realism.

Precludes additional credit for PHIL 2502.

Prerequisite(s): a course in philosophy or second-year standing.

PHIL 2504 [0.5 credit]**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers. The nature of meaning; the connections between language, communication and cognition; language as a social activity.

Also listed as COMS 2504, LING 2504.

Precludes additional credit for COMM 2800, LALS 2504, LALS 2800 and PHIL 2800.

Prerequisite(s): second-year standing.

Lectures three hours a week.

PHIL 2520 [0.5 credit]**Introduction to Philosophical Logic**

An introduction to features of rational thinking activity, its expression, and its relation to the world, focusing on such topics as predication, truth, negation, necessity, entailment, logical form, or quantification.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2540 [0.5 credit]**Personal Identity and the Self**

Philosophical perspectives on personal identity, the self, and the underlying issue of the relationship of the mind to the body. Both philosophical and psychological concepts of identity are discussed, as are related issues such as memory, introspection, and self-knowledge.

Precludes additional credit for PHIL 2502.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2550 [0.5 credit]**Moral Psychology**

An examination of psychological underpinnings of morality, focusing on studies at the intersection of philosophy, psychiatry, and psychology.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2601 [0.5 credit]**Philosophy of Religion**

A study of philosophical issues arising from religion. Topics may include: arguments for and against the existence of God, religious experience, death and the afterlife, miracles, God and evil, the relationship between religion and science, and the relationship between religion and ethics.

Also listed as RELI 2738.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 2700 [0.5 credit]**Asian Philosophy**

An examination of South Asian and East Asian philosophical texts, from the period of the Upanishads and early Buddhism in India to modern philosophical movements. Historical sources may include Hindu, Buddhist, Jain, Confucian or Taoist texts, with a focus on metaphysical, epistemological or ethical themes.

Prerequisite(s): second-year standing.

Lectures three hours a week. May be offered as an online course in selected terms.

PHIL 2807 [0.5 credit]**Philosophy of Art**

Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences.

Also listed as ARTH 2807.

Lecture three hours a week.

PHIL 2901 [0.5 credit]**Truth and Propaganda**

Ancient and modern techniques of persuasion from analytical, ethical and jurisprudential perspectives. Objectivity and bias, advertising and public relations ethics, the viability of democracy in the light of pressures on and within the modern mass media.

Precludes additional credit for PHIL 2900 (no longer offered).

Prerequisite(s): 0.5 credit in PHIL or second-year standing.

Lectures three hours per week.

PHIL 3000 [0.5 credit]**Topics in Ancient Philosophy**

A study of philosophers, texts, problems and issues in ancient philosophy, generally with a focus on Plato and Aristotle.

Also listed as CLCV 3011.

Prerequisite(s): 0.5 credit in philosophy and second-year standing, or permission of the department.

Lectures three hours a week.

PHIL 3001 [0.5 credit]**Early Greek Philosophy**

A study of the pre-Socratic Greek philosophers and of the Sophists and Socrates.

Also listed as CLCV 3001.

Prerequisite(s): CLCV 2105 or PHIL 2005 or permission of the Department.

Lectures three hours a week.

PHIL 3002 [0.5 credit]**17th Century Philosophy**

European philosophy of the 17th century. Representative works of writers such as Francis Bacon, Descartes, Spinoza, Leibniz, and Locke.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department.

Lectures three hours a week.

PHIL 3003 [0.5 credit]**18th Century Philosophy**

European philosophy of the 18th century. Representative works of writers such as Berkeley, Hume, and Kant.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department.

Lectures three hours a week.

PHIL 3005 [0.5 credit]**19th Century Philosophy**

European philosophy in the 19th century. May include Hegel, Marx, Schopenhauer, Kierkegaard, Nietzsche, Mill. Precludes additional credit for PHIL 3007.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the Department.

Lectures three hours a week.

PHIL 3009 [0.5 credit]**Topics in European Philosophy**

A study of philosophers, texts, problems and issues in any period of European philosophy.

Prerequisite(s): 0.5 credit in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3010 [0.5 credit]**Global Philosophical Traditions**

A study of philosophers, texts, and doctrines beyond the Western tradition. Traditions covered will vary but may include Asian, African, Muslim or Indigenous philosophy, possibly with critical comparison to Western counterparts. Precludes additional credit for PHIL 2004.

Prerequisite(s): 0.5 credit in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3102 [0.5 credit]**Philosophy of Law: The Logic of Law**

Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession.

Also listed as LAWS 3102.

Prerequisite(s): 0.5 credit in philosophy or permission of the Department.

Lectures three hours a week.

PHIL 3104 [0.5 credit]**The Roots of Analytic Philosophy**

In the context of the work of such writers as Frege and Bradley, a discussion of early philosophical works of Russell, Moore and Wittgenstein. In addition some early representatives of positivism and pragmatism may be examined.

Prerequisite(s): 0.5 credit in philosophy and second-year standing in a philosophy program, or permission of the department.

Lectures and seminar three hours a week.

PHIL 3140 [0.5 credit]**Epistemology**

Fundamental issues concerning the relation between evidence, rationality, and knowledge. Topics may include: skepticism, the nature of belief, the structure of justification, the relative contributions of reason and sense experience to knowledge, innate knowledge, the problem of induction, and the knowledge of other minds.

Precludes additional credit for PHIL 2300.

Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program or permission of the department.

PHIL 3150 [0.5 credit]**Metaphysics**

Philosophical issues concerning the fundamental nature of being. Topics may include: time and temporality, space, substance, universals/particulars, identity, causation, freedom/determinism, the nature of norms.

Precludes additional credit for PHIL 2302.

Prerequisite(s): 0.5 credit in philosophy and third-year standing in a philosophy program, or permission of the department.

PHIL 3301 [0.5 credit]**Issues in the Philosophy of Science**

Selected topic(s) in the philosophy of science, such as its relationship to values, or in the philosophy of a particular science (such as philosophy of mathematics, philosophy of physics, philosophy of biology, and philosophy of the social sciences).

Prerequisite(s): PHIL 2301 or permission of the department.

Lectures three hours a week.

PHIL 3306 [0.5 credit]**Symbolic Logic**

A review of the basic techniques of propositional and predicate logic. Natural deduction and consistency trees. Soundness and completeness. Alternative semantics.

Extensions to basic logic: identity, modal logic with possible world semantics, three valued systems, deontic logic.

Precludes additional credit for PHIL 3305.

Prerequisite(s): PHIL 2001 or permission of the Department.

Lectures three hours a week.

PHIL 3320 [0.5 credit]**Contemporary Ethical Theory**

Critical study of modern ethical theories, their views on the nature of morality and the justification of moral claims. Topics may include utilitarianism, libertarianism, communitarianism, egoism, neo-Kantianism, virtue ethics, social contract ethics, feminist ethics, and moral rights.

Precludes additional credit for PHIL 2102.

Prerequisite(s): PHIL 2020 or PHIL 2101 or permission of the department.

Lectures three hours a week.

PHIL 3330 [0.5 credit]**Topics in History of Social and Political Philosophy**

A critical examination of selected topics and perspectives in the history of social and political philosophy.

Precludes additional credit for PHIL 3300.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3340 [0.5 credit]**Topics in Contemporary Social and Political Philosophy**

A critical examination of some contemporary approaches to topics in social and political philosophy, such as liberalism, feminism, contractarianism, Marxism, libertarianism, and communitarianism.

Precludes additional credit for PHIL 3300.

Prerequisite(s): a course in philosophy or second-year standing.

Lectures three hours a week.

PHIL 3350 [0.5 credit]**Philosophy, Ethics, and Public Affairs**

Advanced study of a set of public policy issues, a particular theory or group of theories, or a particular philosopher, concerning philosophical and ethical aspects of public affairs.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

PHIL 3360 [0.5 credit]**Philosophy, Economics, and Public Policy**

The course explores issues at the intersection of philosophy and economics, with a special focus on socially and politically relevant issues. Topics may include: efficiency, cooperation, equity and distributive justice, commodification and the moral limits of markets.

Prerequisite(s): third-year standing or permission of the department.

Lectures three hours a week.

PHIL 3380 [0.5 credit]**Environments, Technology and Values**

Advanced treatment of ethical issues concerning technologies and environments, including: sustainable development, women and the environment, biological diversity, intrinsic or natural value or rights of non-humans, humans' relation to the rest of the natural world, obligations to future generations, liberty versus equality.

Precludes additional credit for PHIL 2804.

Prerequisite(s): PHIL 1804 or PHIL 2380 and third-year standing, or permission of the Department.

Lectures three hours a week.

PHIL 3450 [0.5 credit]**Topics in Aesthetics**

Topics may include theories of aesthetic norms and valuation from ancient Greece onward, or applications of aesthetic theory to various genres of art.

Precludes additional credit for PHIL 2400, PHIL 3400, PHIL 3401, and PHIL 3402.

Prerequisite(s): At least 0.5 credit in philosophy, or HUMS 1000, or ARTH 2807, or permission of the Department.

Seminar two hours a week.

PHIL 3501 [0.5 credit]**Philosophy of Cognitive Science**

Philosophical issues arising from cognitive science. Topics may include: the proper methodology for studying the mind, the very possibility of a “science of mind”, the computer model of the mind and reactions to it. Prerequisite(s): PHIL 2501 or PHIL 2502 or second-year standing in Cognitive Science, or permission of the department.

PHIL 3502 [0.5 credit]**Mind and Action**

Philosophical thought concerning the relation between mentality and agency. Topics may include: the relation between belief, desire, and behaviour; rationality and normativity; representing and doing; subjectivity and intersubjectivity; physical and psychological laws; mental causation. Authors may include: Wittgenstein, Heidegger, Ryle, Sellars, Anscombe, Davidson, Taylor, McDowell. Prerequisite(s): PHIL 2501 or PHIL 2502, or permission of the Department.

PHIL 3504 [0.5 credit]**Pragmatics**

The study of language use in its conversational and cultural contexts. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. May include cross-cultural pragmatics.

Also listed as LING 3504.

Precludes additional credit for LALS 2800 [1.0], LALS 3504, MCOM 2800 [1.0], MCOM 3504 and PHIL 2800 [1.0].

Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3505/PHIL 3506; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies.

Lectures three hours a week.

PHIL 3506 [0.5 credit]**Semantics**

Study of language meaning. Lexical meaning and meanings of larger linguistic expressions, including nominal units, verbal units, and sentences. Meaning relationships between utterances. Relationship between linguistic meaning (semantics) and contextual meaning (pragmatics). Basic formal treatments of semantics.

Also listed as LING 3505.

Precludes additional credit for LALS 3505.

Prerequisite(s): third-year standing, and one of LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or PHIL/LALS/LING 3504; or permission of the Department of Philosophy or School of Linguistics and Applied Language Studies.

Lectures three hours a week.

PHIL 3530 [0.5 credit]**Philosophy of Language**

An intensive introduction to philosophy of language. Topics may include meaning, reference and truth, speech acts, the nature of concepts, language learning, metaphor, compositionality, context-sensitivity.

Prerequisite(s): third-year standing, and one of FYSM 1206, LALS 1000, LALS 1001, LING 1001, PHIL 2001, PHIL/LALS/LING/COMM/MCOM 2504 or LALS/LING 3504 or LALS/LING 3505/PHIL 3506; or permission of the department.

Lectures three hours a week.

PHIL 3540 [0.5 credit]**Philosophy of Emotions**

Emotions are central to human experience and widely studied in philosophy and science. In order to better understand them and their role in our lives, this course explores philosophical questions about emotions as they arise in philosophy of mind and cognitive science, ethics, and aesthetics.

Prerequisite(s): PHIL 2501, or permission of the department.

Lectures three hours a week.

PHIL 3901 [0.5 credit]**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3902 [0.5 credit]**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3903 [0.5 credit]**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3906 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3907 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 3908 [0.5 credit]**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite(s): normally restricted to students with at least 3.0 credits in philosophy and with high standing in philosophy courses and permission of the Department.

PHIL 4003 [0.5 credit]**Seminar in philosophy Before the Modern Period**

Detailed study of selected philosophers or issues in philosophy before the modern period.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4004 [0.5 credit]**Seminar in philosophy Before the Modern Period**

Detailed study of selected philosophers or issues in philosophy before the modern period.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4005 [0.5 credit]**Seminar in Modern Philosophy**

Detailed study of selected philosophers or issues in modern philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4006 [0.5 credit]**Seminar in Modern Philosophy**

Detailed study of selected philosophers or issues in modern philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5600, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4007 [0.5 credit]**Seminar in Contemporary Philosophy**

Detailed study of selected philosophers or issues in contemporary philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4008 [0.5 credit]**Seminar in Contemporary Philosophy**

Detailed study of selected philosophers or issues in contemporary philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5500, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4055 [0.5 credit]**Lexical Semantics**

Study of the meaning of words. Topics may include lexical decomposition, meaning variation, lexical relations, and lexical aspect.

Also listed as LING 4510.

Precludes additional credit for LING 4055 (no longer offered).

Prerequisite(s): LING 3505 or PHIL 3506.

Also offered at the graduate level, with different requirements, as LING 5510 and PHIL 5660, for which additional credit is precluded.

Seminars three hours a week.

PHIL 4100 [0.5 credit]**Special Topic**

Detailed study of a special topic in philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5000, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4210 [0.5 credit]**Seminar in Philosophy of Language or Linguistics**

Detailed study of selected issues or the work of selected philosophers in philosophy of language or on philosophical topics in linguistics.

Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4220 [0.5 credit]**Seminar in philosophy of Mind or Cognition**

Detailed study of selected issues or the work of selected philosophers in philosophy of mind or philosophical aspects of cognition.

Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5200, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4230 [0.5 credit]**Seminar in Metaphysics, Epistemology, or Philosophy of Science**

Detailed study of selected issues or the work of selected philosophers in metaphysics, epistemology, or philosophy of science.

Prerequisite(s): eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5250, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4300 [0.5 credit]**Seminar in Ethical Theory or Meta-Ethics**

Detailed study of selected issues pertaining to ethical theory or issues of meta-ethics such as realism, relativism, moral knowledge.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5300, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4320 [0.5 credit]**Seminar in Ethics or Moral Philosophy**

Detailed study of selected issues in ethics or moral philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4330 [0.5 credit]**Seminar in Social or Political Philosophy**

Detailed study of selected issues in social or political philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Also offered at the graduate level, with different requirements, as PHIL 5350, for which additional credit is precluded.

Seminar three hours a week.

PHIL 4403 [0.5 credit]**Special Topic in Applied Ethics**

Detailed study of a special topic in applied ethics.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4404 [0.5 credit]**Special Topic in Applied Ethics**

Detailed study of a special topic in applied ethics.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4405 [0.5 credit]**Special Topic in Aesthetics or Philosophy of Art**

Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4406 [0.5 credit]**Special Topic in Aesthetics or Philosophy of Art**

Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4407 [0.5 credit]**Special Topic in Philosophy of Law**

Detailed study of a special topic in philosophy of law.

Also listed as LAWS 4103.

Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.

Seminars three hours a week.

PHIL 4408 [0.5 credit]**Special Topic in Philosophy of Law**

Detailed study of a special topic in philosophy of law.

Also listed as LAWS 4104.

Prerequisite(s): eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.

Seminars three hours a week.

PHIL 4503 [0.5 credit]**Special Topic in Philosophy of Computing**

Detailed study of a special topic in philosophy of computing.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4504 [0.5 credit]**Special Topic in Philosophy of Computing**

Detailed study of a special topic in philosophy of computing.

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4505 [0.5 credit]**Formal Semantics**

Advanced topics in compositional semantics and its interfaces. Topics may include: logic, semantic types, lambda calculus, intentional contexts, possible world semantics, interfaces with syntax and pragmatics quantification, anaphora, presupposition, implicatures, scope and binding, and model theory.

Also listed as LING 4505.

Precludes additional credit for LALS 4507 (no longer offered).

Prerequisite(s): LALS 3505 or LING 3505 or PHIL 3506 or permission of the Department of Philosophy or School of Linguistics and Language Studies.

Seminars three hours a week.

PHIL 4603 [0.5 credit]**Special Topic in Feminist Philosophy**

Detailed study of a special topic in feminist philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4604 [0.5 credit]**Special Topic in Feminist Philosophy**

Detailed study of a special topic in feminist philosophy.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4606 [0.5 credit]**Special Topic in Continental Philosophy**

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4607 [0.5 credit]**Special Topic in Continental Philosophy**

Prerequisite(s): eligibility for fourth-year standing in philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4701 [0.5 credit]**Special Topic in Logic**

Detailed study of a special topic in Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4702 [0.5 credit]**Special Topic in Logic**

Detailed study of a special topic in Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4703 [0.5 credit]**Special Topic in Philosophical Logic**

Detailed study of a special topic in Philosophical Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4704 [0.5 credit]**Special Topic in Philosophical Logic**

Detailed study of a special topic in Philosophical Logic.

Prerequisite(s): eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4900 [1.0 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4901 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4902 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4903 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4904 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4906 [0.5 credit]**Tutorial**

Prerequisite(s): permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

Physics (PHYS)

Physics (PHYS) Courses**PHYS 1001 [0.5 credit]****Foundations of Physics I**

This calculus-based course on classical mechanics covers kinematics, dynamics, gravitation, and oscillatory motion. This is a specialist course for students intending to take further courses in physics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, BIT 1203, PHYS 1003, PHYS 1007.

Prerequisite(s): Grade 12 Mathematics: Advanced Functions and Grade 12 Mathematics: Calculus and Vectors or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently); or permission of the Physics Department. Grade 12 Physics is strongly recommended.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1002 [0.5 credit]**Foundations of Physics II**

An introduction to electricity, magnetism, electromagnetic fields, and wave motion. This is a specialist course for students intending to take further courses in physics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1004, PHYS 1008.

Prerequisite(s): PHYS 1001, or PHYS 1003, or PHYS 1007 with a grade of B-; MATH 1004 or MATH 1002 (may be taken concurrently) or MATH 2052 (may be taken concurrently); or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1003 [0.5 credit]**Introductory Mechanics and Thermodynamics**

Mechanics, gravitation, oscillations, and thermodynamics.

The application of calculus to solve problems in these areas of physics is introduced. This course is intended for students in the physical sciences and engineering.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1007.

Prerequisite(s): Grade 12 Physics or equivalent, plus Grade 12 Mathematics: Advanced Functions or equivalent, plus one of MATH 1004 or MATH 1002 or MATH 1052 (the MATH course may be taken concurrently). Note that Grade 12 Mathematics: Calculus and Vectors is strongly recommended.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1004 [0.5 credit]**Introductory Electromagnetism and Wave Motion**

This calculus-based course introduces potential energy, work, electricity, magnetism, oscillations and waves.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1008.

Prerequisite(s): MATH 1004, ECOR 1101 or ECOR 1053 or (ECOR 1045 and ECOR 1046)(The ECOR courses may be taken concurrently) or PHYS 1001 or PHYS 1003 or PHYS 1007 (a grade of at least B- is required for PHYS 1007), or permission of the Department.

Lectures three hours a week, laboratory or tutorial three hours a week.

PHYS 1007 [0.5 credit]**Elementary University Physics I**

Mechanics, properties of matter, thermodynamics. Applications chosen in part from the life sciences. For students who lack the prerequisites for PHYS 1001 or PHYS 1003, or who do not intend to take upper-year courses in physics.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1002, BIT 1203, PHYS 1001, PHYS 1003.

Prerequisite(s): (i) Grade 12 Mathematics: Advanced Functions or equivalent, or MATH 0107 (may be taken concurrently); or (ii) Grade 12 Mathematics: Calculus and Vectors or equivalent, or MATH 1007 (may be taken concurrently); or (iii) permission of the Physics Department. Lectures three hours a week, laboratory or tutorial three hours per week.

PHYS 1008 [0.5 credit]**Elementary University Physics II**

Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics. Applications chosen in part from the life sciences.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 1003 (no longer offered), BIT 1007, BIT 1204, PHYS 1002, PHYS 1004.

Prerequisite(s): PHYS 1001 or PHYS 1003 or PHYS 1007. Lectures three hours a week, laboratory or tutorial three hours per week.

PHYS 1901 [0.5 credit]**Planetary Astronomy**

Description of the known stellar, galactic and extra-galactic systems together with the instruments used to study them. Modern ideas concerning the structure, origin and evolution of our own planet. Formation of the Moon - Earth system. Study of the planets in our solar system.

Precludes additional credit for PHYS 2203.

Lectures two and one-half hours a week.

PHYS 1902 [0.5 credit]**From our Star to the Cosmos**

Starting with the Sun, the course studies its composition and source of power, then compares our Sun with the other stars in the galaxy and beyond. Modern ideas concerning the structure, origin and evolution of the universe, pulsars and supernovae are examined.

Precludes additional credit for PHYS 2203.

Lectures two and one-half hours a week.

PHYS 1905 [0.5 credit]**Physics Behind Everyday Life**

Examination of the physics behind everyday life. Topics may include transportation, sports, weather and climate, electricity, and sustainable energy. No science background is required. Faculty of Science students may only take this course as a free elective.

Includes: Experiential Learning Activity

Online Course.

PHYS 2004 [0.5 credit]**Modern Physics for Engineers**

Introduction to aspects of modern physics relevant to engineering. Thermal radiation. Concepts of relativistic kinematics. Wave-particle duality. Elements of quantum mechanics. Optical and x-ray spectra, lasers. Nuclear physics and applications. Condensed matter physics. Precludes additional credit for PHYS 2604.

Prerequisite(s): PHYS 1002 or PHYS 1004 or PHYS 1008 with a grade of B- or better, plus MATH 1004 and MATH 1104 or equivalent. Restricted to B.Eng. students not in the Engineering Physics program. Students in programs other than B.Eng. must obtain permission of the Department.

Lectures three hours a week.

PHYS 2101 [0.5 credit]**Mechanics and Properties of Matter**

Equations of motion for a single particle. Harmonic oscillation. Noninertial reference frames. Orbits in a central force field. Motion of systems of particles and of rigid bodies. Introduction to special relativity. Laboratory experiments in classical mechanics and properties of matter.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall average of B- or better; MATH 1004 and MATH 1104, or MATH 1002 and MATH 1102.

Lectures three hours a week, laboratory three hours a week, tutorials (optional) once a week.

PHYS 2202 [0.5 credit]**Wave Motion and Optics**

Geometrical optics. Types of waves, vibrating string and the classical wave equation. General solutions for traveling waves. Superposition and interference, coherence, wave packets, waves in 2 and 3 dimensions. Propagation of electromagnetic waves. Light and physical optics, oscillator model for dispersion, diffraction, polarization, and refraction.

Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1104 or MATH 1102 or MATH 2152, and MATH 2004 or MATH 2000 (MATH 2000 may be taken concurrently).

Lectures three hours a week, laboratory three hours a week.

PHYS 2203 [0.5 credit]**Astronomy**

The observational basis of astronomy. The history of astronomy, properties of light, solar system observations and stellar astronomy.

Precludes additional credit for PHYS 1901 and PHYS 1902.

Prerequisite(s): PHYS 1002 or PHYS 1004 or permission of the department. PHYS 1008 with a grade of B- or better may also be used if MATH 1004 or MATH 1007 or MATH 1002 or MATH 2052 have been successfully completed.

Lectures three hours a week.

PHYS 2305 [0.5 credit]**Electricity and Magnetism**

Electrostatic field and potential, Gauss' law. Properties of conductors. Magnetic effects from currents. Motion of charges in electric and magnetic fields. Energy in electric and magnetic fields. Electromagnetic induction. Maxwell's equations in vacuum using vector differential and integral calculus.

Prerequisite(s): PHYS 1001, PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or higher; MATH 2004 or MATH 2000 (MATH 2000 may be taken concurrently).

Lectures three hours a week.

PHYS 2306 [0.5 credit]**Physics of Electrical and Electronic Measurements I**

D.C. and A.C. circuit theory. Resonant circuits. Basic measuring devices, the oscilloscope; impedances, bandwidth, noise; vacuum tubes, transistors, useful approximations for circuit design; feedback, amplifiers, oscillators; operational circuits; digital circuits. Lectures emphasize the physical basis of instrument design.

Laboratory emphasizes modern digital instrumentation. Includes: Experiential Learning Activity

Prerequisite(s): PHYS 1001, PHYS 1002 or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or better.

Lectures three hours a week, laboratory three hours a week.

PHYS 2401 [0.5 credit]**Thermal Physics**

Introduction to thermodynamics and statistical mechanics. Temperature and thermodynamic equilibrium. Work, internal energy and heat; first law. Kinetic theory of gases. Basic probability theory. Microscopic states and entropy. Absolute temperature, reversibility and the second law of thermodynamics. Thermodynamic processes and applications.

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B-) ; plus MATH 1004 and MATH 1104 or MATH 1002 (no longer offered) and MATH 1102 (no longer offered), or MATH 2052 and MATH 2152.

Lectures three hours a week.

PHYS 2604 [0.5 credit]**Modern Physics I**

The course is designed to provide a logical transition from classical to modern physics. Special relativity. Rutherford scattering, atomic models. Thermal radiation. Photoelectric effect, Compton scattering. Bohr theory of the hydrogen atom. Atomic energy states, optical spectra, lasers. X-rays. Radioactivity. Quantum Mechanics.

Includes: Experiential Learning Activity
Precludes additional credit for PHYS 2004.

Prerequisite(s): PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1004 and MATH 1104, or MATH 1002 (no longer offered) and MATH 1102 (no longer offered) or MATH 2052 and MATH 2152.

Lectures three hours a week, laboratory three hours a week.

PHYS 2903 [0.5 credit]**Physics Towards the Future**

From classical phenomena to aspects of modern physics and recent advances. Topics may include light and colour, music and sound, cell phones, the galaxy and beyond.

No science background is required. Faculty of Science students may only take this course as a free elective.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Online course.

PHYS 3007 [0.5 credit]**Third Year Physics Laboratory: Selected Experiments and Seminars**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3008, PHYS 3009.

Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the Department.

Six hours a week.

PHYS 3008 [0.5 credit]**Third Year Physics Laboratory: Selected Experiments and Workshop**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3007, PHYS 3009.

Prerequisite(s): PHYS 2202 and PHYS 2604, or permission of the department.

Six hours a week.

PHYS 3009 [0.5 credit]**Third Year Physics Laboratory: Selected Experiments and Seminars with Observational Astronomy**

Students complete a small number of experiments selected from astronomy, astrophysics, modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. At least one astronomy/astrophysics related experiment is required. An exercise on literature searches and student seminars on experimental and numerical methods are included.

Includes: Experiential Learning Activity

Precludes additional credit for PHYS 3007, PHYS 3008.

Prerequisite(s): PHYS 2202, PHYS 2604 and PHYS 2203 or permission of the Department.

Six hours a week.

PHYS 3207 [0.5 credit]**Topics in Biophysics**

Introduction to biophysics. Random motion of molecules and diffusion; viscosity and the circulatory system; laws of thermodynamics and physical forces responsible for chemical reactions, molecular self-assembly and recognition; enzyme kinetics and molecular machines; nerve impulse and its propagation.

Prerequisite(s): PHYS 2604 or permission of the Department.

Lectures three hours a week, tutorial or seminar one hour a week.

PHYS 3308 [0.5 credit]**Electromagnetism**

Electrostatics field and magnetostatics in the presence of matter. Solving Laplace's and Poisson's equations. Multipole expansions. Vector potential. Faraday's laws of induction; Maxwell's equations in matter. Waves in vacuum and dielectric media, guided waves.

Precludes additional credit for ELEC 3909.

Prerequisite(s): PHYS 2202, PHYS 2604, PHYS 2305, MATH 2004 or MATH 2008, and MATH 3705, or permission of the Department.

Lectures three hours a week.

PHYS 3402 [0.5 credit]**Heat and Thermodynamics**

Zeroth, First, Second and Third Laws of Thermodynamics; enthalpy, Helmholtz and Gibbs functions and the Maxwell relations; phase transitions; thermodynamics of magnetism; cryogenics cooling by Joule-Thompson effect, adiabatic expansion of a gas, adiabatic demagnetization, helium dilution refrigeration; black body radiation; negative temperatures.

Prerequisite(s): PHYS 2101 and PHYS 2305, MATH 2007, MATH 2008, MATH 2107 and MATH 2401 or permission of the Department.

Lectures three hours a week.

PHYS 3606 [0.5 credit]**Modern Physics II**

Elements of condensed matter physics, semiconductors, superconductivity. Elements of nuclear physics, fission, fusion, power generation. Introduction to particle physics. Ionizing radiation: production, interactions, detection. Medical physics: radiation biophysics, cancer therapy, imaging.

Includes: Experiential Learning Activity

Also listed as PHYS 3608.

Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department.

Lectures three hours a week, laboratory two hours a week.

PHYS 3608 [0.5 credit]**Modern Applied Physics**

Elements of condensed matter physics, semiconductors, superconductivity. Modern optics. Elements of nuclear physics, fission, fusion, power generation. Ionizing radiation: production, interactions, detection. Medical physics: radiation biophysics, cancer therapy, imaging.

Includes: Experiential Learning Activity

Also listed as PHYS 3606.

Prerequisite(s): PHYS 2604 and PHYS 3701, or permission of the Department.

Lectures three hours a week, laboratory three hours a week.

PHYS 3701 [0.5 credit]**Elements of Quantum Mechanics**

Analysis of interference experiments with waves and particles; fundamental concepts of quantum mechanics, Schrödinger equation; angular momentum, atomic beams; hydrogen atom; atomic and molecular spectroscopy; Pauli principle; simple applications in the physics of elementary particles.

Prerequisite(s): PHYS 2604, MATH 2000 [1.0] (may be taken concurrently), or MATH 2004 or MATH 2008, and MATH 3705 (may be taken concurrently), or permission of the Department.

Lectures three hours a week.

PHYS 3801 [0.5 credit]**Classical Mechanics**

Introduction to Lagrangian and Hamiltonian mechanics: Poisson brackets, tensors and dyadics; rigid body rotations: introductory fluid mechanics coupled systems and normal coordinates; relativistic dynamics.

Prerequisite(s): PHYS 2101, PHYS 2202, PHYS 2305, MATH 2007, MATH 2008, MATH 2107, MATH 2401 or permission of the Department.

Lectures three hours a week.

PHYS 3802 [0.5 credit]**Advanced Dynamics**

Equations of motion for a single particle. Oscillatory Motion. Lagrangian and Hamiltonian formulations of mechanics. Central force motion. Motion of systems of particles and of rigid bodies.

Prerequisite(s): PHYS 2202, PHYS 2604, and MATH 2004, or permission of the Department.

Lectures three hours a week.

PHYS 3807 [0.5 credit]**Mathematical Physics I**

Boundary Value problems involving curvilinear coordinates; spherical harmonics, Bessel functions, Green's functions. Functions of a complex variable: analytic functions, contour integration, residue calculus. Precludes additional credit for MATH 3007 or MATH 3057. Prerequisite(s): PHYS 2202, MATH 2004, MATH 3705 or permission of the Department. Lectures three hours a week, tutorial one hour a week.

PHYS 3808 [0.5 credit]**Mathematical Physics II**

Solution of second-order total differential equations by Frobenius' method. Sturm-Liouville theory. Special functions: Legendre, Bessel, Hermite, Laguerre and associated functions. Partial differential equations: method of separation of variables, eigenfunctions and eigenvalues and eigenfunction expansions. Green's function techniques for solving inhomogeneous partial differential equations. Precludes additional credit for MATH 3004, MATH 3008, MATH 3705, and PHYS 3806. Prerequisite(s): PHYS 3807 or MATH 3007 or permission of the Department. Lectures three hours a week.

PHYS 3999 [0.0 credit]**Co-operative Work Term Report**

Provides practical experience for students enrolled in the Co-operative option. Students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns. Includes: Experiential Learning Activity Prerequisite(s): registration in the Physics Co-operative education option and permission of the Department.

PHYS 4007 [0.5 credit]**Fourth-Year Physics Laboratory: Selected Experiments and Seminars**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included. Includes: Experiential Learning Activity Prerequisite(s): PHYS 3606 (or PHYS 3608) and registration in the Engineering Physics program. Laboratory, six hours a week.

PHYS 4008 [0.5 credit]**Fourth-Year Physics Laboratory: Selected Experiments and Workshop**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given. Includes: Experiential Learning Activity Prerequisite(s): PHYS 3007. Six hours a week.

PHYS 4201 [0.5 credit]**Astrophysics**

Stellar evolution, including stellar modeling, main sequence stars, red giants and the end states of stars such as neutron stars and black holes. Galactic structure and dynamics. Neutrino astrophysics. Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently). Also offered at the graduate level, with different requirements, as PHYS 5401, for which additional credit is precluded. Lectures three hours a week.

PHYS 4202 [0.5 credit]**Cosmology**

Observational evidence for the Big Bang. Cosmological space-time, expansion dynamics and contents of the universe. Physical processes in the expanding universe, inflation, nucleosynthesis, the cosmic microwave background, dark matter, and dark energy. Prerequisite(s): PHYS 3701, PHYS 3606 or PHYS 3608, and PHYS 2401 or PHYS 4409, or permission of the Department. (PHYS 3606 or PHYS 3608 and PHYS 4409 may be taken concurrently). Also offered at the graduate level, with different requirements, as PHYS 5402, for which additional credit is precluded. Lectures three hours per week.

PHYS 4203 [0.5 credit]**Physical Applications of Fourier Analysis**

Fourier transform, convolution. Sampling theorem. Applications to imaging: descriptors of spatial resolution, filtering. Correlation, noise power. Discrete Fourier transform, FFT. Filtering of noisy signals. Image reconstruction in computed tomography and magnetic resonance. Laplace transform. Integral transforms, application to boundary value problems. Prerequisite(s): MATH 3705, or permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5313, for which additional credit is precluded. Lectures three hours a week.

PHYS 4208 [0.5 credit]**Modern Optics**

Electromagnetic wave propagation; reflection, refraction; Gaussian beams, guided waves. Laser theory: stimulated emission, cavity optics, modes, gain and bandwidth; atomic and molecular lasers. Mode locking, Q switching. Diffraction theory, coherence, Fourier optics, holography, laser applications. Optical communication systems, nonlinear effects: devices, fibre sensors, integrated optics. Prerequisite(s): PHYS 2202, PHYS 3606 (or PHYS 3608), and PHYS 3308 or permission of the Department.

Also offered at the graduate level, with different requirements, as PHYS 5318, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4307 [0.5 credit]**Electromagnetic Radiation**

Electromagnetic wave propagation in a vacuum, dielectrics, conductors, and ionized gases, reflection, refraction, polarization at the plane boundary between two media; waveguide and transmission line propagation; dipole and quadrupole radiation fields; antenna systems. Electromagnetic mass, radiation pressure. Tensor notation, transformation of the electromagnetic fields. Prerequisite(s): PHYS 3308, PHYS 3801, PHYS 3807 and PHYS 3808 (except for Mathematics and Physics Double Honours students), or permission of the Department.

Lectures three hours a week.

PHYS 4407 [0.5 credit]**Statistical Physics**

Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics are derived, and applied in appropriate physical situations. Fluctuations. Kinetics and transport processes, including the Boltzmann transport equation and some of its applications.

Prerequisite(s): PHYS 3402, PHYS 2602 or PHYS 3601, PHYS 3701 or PHYS 3602, PHYS 4707 (may be taken concurrently); or permission of the Department.

Lectures three hours a week.

PHYS 4409 [0.5 credit]**Thermodynamics and Statistical Physics**

The three Laws of Thermodynamics, enthalpy, Helmholtz and Gibbs functions. Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics.

Precludes additional credit for PHYS 3402 and PHYS 4407.

Prerequisite(s): PHYS 3701 (may be taken concurrently), MATH 2004 and MATH 3705, or permission of the Department.

PHYS 4508 [0.5 credit]**Solid State Physics**

An introduction to solid state physics. Topics include crystal structure, phonons and lattice vibrations, conductors, semiconductors, insulators and superconductivity.

Prerequisite(s): PHYS 3606 or PHYS 3608, and PHYS 3701, or permission of the Department.

Lectures three hours a week.

PHYS 4602 [0.5 credit]**Physics of Elementary Particles**

Standard Model. Properties of leptons, quarks, hadrons. Fundamental interactions: photon, gluons, W/Z bosons. Higgs boson. Conservation laws, invariance principles, quantum numbers. Decay rates and scattering cross-sections. Quantum electrodynamics and chromodynamics. Resonances. Weak interactions, CKM matrix, parity and CP violation. Neutrino masses and oscillations. Future directions.

Prerequisite(s): PHYS 4707 or permission of the Department.

Also offered at the graduate level, with different requirements, as PHYS 5602, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4608 [0.5 credit]**Nuclear Physics**

Ground state properties of nuclei. Nuclear models, binding energy, properties of excited nuclei. Alpha, beta and gamma decay. Passage of radiation through matter, detectors. Nuclear reactions, cross sections, fission, fusion. Elements of neutron physics.

Prerequisite(s): PHYS 3606 or PHYS 3608 or permission of the Department.

Lectures three hours a week.

PHYS 4707 [0.5 credit]**Introduction to Quantum Mechanics I**

The basic interpretative postulates of quantum mechanics; applications of wave mechanics and operator methods to various quantum mechanical systems; quantum mechanical treatment of angular momentum.

Prerequisite(s): PHYS 3701 and PHYS 3807 or equivalent, or permission of the Department.

Lectures three hours a week.

PHYS 4708 [0.5 credit]**Introduction to Quantum Mechanics II**

Scattering theory and application; bound state problems; approximation methods.

Prerequisite(s): PHYS 4707 or permission of the Department.

Lectures three hours a week.

PHYS 4804 [0.5 credit]**Introduction to General Relativity**

Special relativity using tensor analysis. Curved spacetime with physics applications which may include the solar system, stars, black holes and gravitational waves. Introduction to differential geometry and Einstein's field equations.

Prerequisite(s): PHYS 3308, PHYS 3802 and PHYS 3807 or equivalent, or permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5804, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4807 [0.5 credit]**Statistical Data Analysis Techniques for Physics**

Computational methods used in analysis of experimental data. Introduction to probability and random variables. Monte Carlo methods for simulation of random processes. Statistical methods for parameter estimation and hypothesis tests. Confidence intervals. Multivariate data classification. Unfolding methods. Examples primarily from particle and medical physics.

Prerequisite(s): third year standing in a physics program and an ability to program in Python, Java, C or C++, and permission of the Department. Also offered at the graduate level, with different requirements, as PHYS 5002, for which additional credit is precluded.

Lectures three hours a week.

PHYS 4901 [0.5 credit]**Special Topics in Physics**

Each year, at the direction of the Department, a course on a special topic may be offered.

Prerequisite(s): permission of the Department.

PHYS 4907 [0.5 credit]**Fourth-Year Project**

Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.

Project. Fall term only.

PHYS 4908 [0.5 credit]**Fourth-Year Project**

Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.

Project. Winter term only.

PHYS 4909 [1.0 credit]**Fourth-Year Project**

Advanced projects of an experimental or theoretical nature with an orientation towards research. A written mid-term progress report is required and also a written and oral report at the conclusion of the project.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in an Honours Physics program or equivalent, and permission of the Department.

Project

Political Management (POLM)

Political Management (POLM) Courses**POLM 3000 [0.5 credit]****Introduction to Political Management**

Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.

Also listed as COMS 3100, PSCI 3410.

Precludes additional credit for COMM 3100 (no longer offered).

Prerequisite(s): third-year standing.

Lecture three hours a week.

POLM 4010 [0.5 credit]**Polling and Opinion Research**

The different elements of opinion research such as opinion measurement, questionnaire design, interviewing, data analysis and interpretation, and how this helps understand the process by which citizens make decisions about political issues.

Prerequisite(s): POLM 3000.

Also offered at the graduate level, with different requirements, as POLM 5010, for which additional credit is precluded.

Seminar three hours a week.

POLM 4012 [0.5 credit]**Advocacy and Government Relations in Canada**

Through applied exercises, case studies and a project with an external organization, students will build knowledge and skills required for advocacy and government relations in the private and voluntary sectors.

Prerequisite(s): POLM 3000.

Also offered at the graduate level, with different requirements, as POLM 5012, for which additional credit is precluded.

Seminar three hours per week

Political Science (PSCI)

Political Science (PSCI) Courses

PSCI 1100 [0.5 credit]

Democracy in Theory and Practice

Introduction to modern political ideas such as liberty, equality, the rule of law, representation, participation (including gender aspects), the impact of these ideas on political and policy making institutions in Canada; other countries may be examined. Basic research and academic writing skills.

Precludes additional credit for PSCI 1000 (no longer offered), PSCI 1001 (no longer offered), and PSCI 1003 (no longer offered).

Lectures two hours a week, tutorials one hour a week.

PSCI 1200 [0.5 credit]

Politics in the World

Compares politics in selected states and world regions, including political institutions and cultures, development, public policy making, and gender. Global issues and international relations among states, international organizations, and other actors. Basic research and academic writing skills.

Precludes additional credit for PSCI 1000 (no longer offered), PSCI 1002, GPOL 1000 (no longer offered) and GPOL 1500.

Lectures two hours a week, tutorials one hour a week.

PSCI 1500 [0.5 credit]

Technology, Nature, Power

Social media, self-driving cars, genetic manipulation: technology is transforming both the human experience and the natural world. This course explores interactions among technological change, the evolution of social and political order, and the transformation of the environment (for example, with climate change).

Lectures two hours a week.

PSCI 1501 [0.5 credit]

Politics of Migration

Introduction to concepts and theories that help explain the complex phenomenon of human migration, including the social and political relevance of different types of migration to Canada and in other regions and the political responses to migration and mobility today.

Lectures two hours a week, tutorials one hour a week.

PSCI 2002 [0.5 credit]

Canadian Politics and Civil Society

An examination of the cultural, social, and economic context of Canadian politics, including interest groups and social movements, regionalism, language, ethnicity, and gender.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2003 [0.5 credit]

Canadian Political Institutions

An examination of Canadian political institutions, including federalism, Parliament, the constitution, political parties and the electoral system.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2101 [0.5 credit]

Comparative Politics of the Global North

Domestic politics in states of the Global North.

Comparison of political and economic regimes, political institutions, actors, political processes and cultures, and patterns of public policy making.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2102 [0.5 credit]

Comparative Politics of the Global South

Introduction to domestic politics in post-colonial and developing states of the Global South. Topics may include nationalism, authoritarianism, economic development, revolution, democratization, and the politics of gender, religion, and ethnicity.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2200 [0.5 credit]

Introduction to U.S. Politics

An examination of several important aspects of the U.S. political system, including separation of powers, checks and balances, and federalism.

Includes: Experiential Learning Activity

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorial one hour a week.

PSCI 2301 [0.5 credit]

History of Political Thought I

Study of the foundations of democracy, law, and political regimes, within a broader reflection on virtue and the good life in Western classical political thought. Course may include texts by Sophocles, Thucydides, Plato, Aristotle, Augustine, Aquinas, de Pizan, and others.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2302 [0.5 credit]

History of Political Thought II

Study of the emergence, transformations, uses, and meanings of modern political concepts such as liberty, legitimacy, equality, rights, sovereignty, authority, and the state through the interpretation of Western political thinkers such as Machiavelli, Hobbes, Locke, Rousseau, Hume, Wollstonecraft, Marx, Mill and others.

Prerequisite(s): PSCI 2301 or permission of the department.

Lectures two hours a week, tutorials one hour a week.

PSCI 2401 [0.5 credit]**Public Affairs Analysis**

Introduction to central concepts and processes involved in public affairs. Exploration of public issues, policy approaches and decision-making structures using theoretical, empirical and applied approaches.

Precludes additional credit for PSCI 2400 (no longer offered).

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2500 [0.5 credit]**Gender and Politics**

Introduction to gender and politics of diversity, including how feminist activism and organizing finds expression in the political process and structures of representation such as political parties, legislatures and the state.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2601 [0.5 credit]**International Relations: Global Politics**

Introduction to theories, concepts and issues in global politics. Topics may include conflict and intervention, peace and security, international institutions, norms and ethics, human rights, gender, culture, and globalization.

Precludes additional credit for GPOL 1000 (no longer offered), GPOL 1500.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2602 [0.5 credit]**International Relations: Global Political Economy**

Introduction to the international political economy. Topics may include contemporary changes in the global political economy, multinational corporations, foreign economic policy, global and regional economic institutions, environmental issues, international development and relations between rich and poor countries.

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2701 [0.5 credit]**Introduction to Research Methods in Political Science**

Introduction to the logic and design of research. Measurement and inference in qualitative and quantitative political science.

Precludes additional credit for PSCI 2700 (no longer offered).

Prerequisite(s): second-year standing.

Lectures two hours a week, tutorials one hour a week.

PSCI 2702 [0.5 credit]**Quantitative Research Methods in Political Science**

The logic and methods of the quantitative study of politics, with emphasis on the application and interpretation of statistical techniques for data analysis. Students are strongly encouraged to take this course the same year as PSCI 2701.

Includes: Experiential Learning Activity

Precludes additional credit for ENST 2006, GEOG 2006, PSCI 2700 (no longer offered).

Prerequisite(s): PSCI 2701 or permission of the Department.

Lectures two hours a week, tutorials one hour a week.

PSCI 3000 [0.5 credit]**Canadian Provincial Politics**

A comparative examination of the nature of Canadian provincial politics. Topics include: political culture, history, party systems, electoral systems and voting behaviour.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3004 [0.5 credit]**Political Parties and Elections in Canada**

The evolution of the party system, the growth of major and minor party movements and the electoral process in Canada.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3005 [0.5 credit]**Ontario Government and Politics**

A survey of the political process and political institutions in Ontario.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3006 [0.5 credit]**Social Power in Canadian Politics**

The role of social forces in the Canadian political process, including interest groups, social movements, elites and classes.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3007 [0.5 credit]**Constitutional Politics in Canada**

The politics of the Canadian constitution. Particular attention to historical and contemporary constitutional reform.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3100 [0.5 credit]**Politics of Development in Africa**

The historical background of African independence, and contemporary struggle for democracy and economic development in Africa.

Prerequisite(s): third-year standing and one of AFRI 1002, GPOL 1000, GPOL 1500, GPOL 2500 or PSCI 2102.

Lectures three hours a week.

PSCI 3101 [0.5 credit]**Politics of War in Africa**

The recurrent crises of war, and political instability in Africa, along with regional and international efforts to resolve them.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3102 [0.5 credit]**Politics of Development of China**

The evolving structures and processes of government in (greater) China with particular emphasis on politics in the People's Republic of China and secondary emphasis on Taiwan and Hong Kong.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3103 [0.5 credit]**State, Society and Economy in Northeast Asia**

The relationship between government structures, society and the economy in Northeast Asia with particular emphasis on Japan and Korea.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3105 [0.5 credit]**Imperialism**

Ideologies, practices, and legacies of western dominance over Asia, Africa, and Latin America. Examines the complexities of imperial control and the colonial relationship from the nineteenth century to present.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3107 [0.5 credit]**The Causes of War**

Alternate theories of the causes of war. Such alternate perspectives as biological, social and comparative historical approaches, including the results of peace research activities of the past two decades.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.

Lectures three hours a week.

PSCI 3108 [0.5 credit]**Politics of Popular Culture**

Examines political themes in popular culture. Cultural media may include film, literature, television, music, cartoons/comics, and the news media. Political themes may include war, ethnicity, nationalism, revolution, citizenship, gender and sexuality.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3109 [0.5 credit]**The Politics of Law and Morality**

Politics of moral regulation in Canada, the United States and other jurisdictions. The treatment in law and public policy of such human rights issues as: capital punishment, sexual orientation, euthanasia, abortion, new reproductive technologies, racial discrimination, religious and equality rights.

Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003 or PSCI 2101.

Lectures three hours a week.

PSCI 3200 [0.5 credit]**U.S. Constitutional Politics**

The central role played by the U.S. Constitution in the country's political life, from the Framers to current controversies. Includes issues of race, class and gender.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3203 [0.5 credit]**Government and Politics in the Middle East**

The evolution and functioning of political systems in the Middle East region, with emphasis on the problems of political stability, the impact of the West, the role of Islam, and war and peace.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3204 [0.5 credit]**Politics of Latin America**

An overview of the evolution of Latin American political systems, including the impact of the European conquest, democratization, economic liberalization, state-civil society relations, gender politics, revolutionary movements, and relations with the United States.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3205 [0.5 credit]**Mexican Politics**

An introduction to the politics, society and economy of Mexico. Topics include processes of democratization and economic liberalization, human rights, the environment, the role of women, labour, and indigenous peoples, and social policy. Special emphasis on Mexico's role in the North American political economy.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and one of GPOL 1500, GPOL 2500, PSCI 2102 or PSCI 2602.

Lectures three hours a week.

PSCI 3206 [0.5 credit]**European Democracies**

A comparative examination of select controversies over democracy in specific European countries, considered within the context of 20th century historical trends, as well as contemporary political debates.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3207 [0.5 credit]**The Government and Politics of European Integration**

The process of European integration; the European Union and its institutions; core EU policies, challenges to the integration process (e.g. democratic legitimacy, enlargement); theories of European integration.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3208 [0.5 credit]**Politics in Russia and Ukraine: Power and Contestation**

Political development in post-Soviet Russia and Ukraine, including examination of the complicated relationship between the two states. Historical perspectives, institutional context (including federalism) and comparative insights.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3209 [0.5 credit]**Reconstruction and Transformation in Europe and Eurasia**

The politics of dramatic political changes, such as revolution, secession, constitutional revision, and systemic reform. The course will include selected historical and comparative cases from Central and Eastern Europe and the former Soviet Union.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3210 [0.5 credit]**Electoral Politics in the U.S.**

An overview of specific aspects of U.S. electoral politics, including presidential and congressional elections, incumbency, the two-party system, campaign spending limits, the role of the media, and voter turnout.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3300 [0.5 credit]**Politics and Literature**

A study of imaginative prose in which political ideas and/or political settings dominate. Literature as political communication, the impact of literature upon politics, the peculiar value of literature in the study of politics and its shortcomings.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3303 [0.5 credit]**Feminist Political Theory**

Introduction to feminist philosophical responses to sexism, taking into consideration the different waves of feminist discourse. Topics may include the concept of gender; women's diversity and its implications; 'intersectionality'; gender, capitalism and the family; and new approaches to feminist knowledge and feminist agency.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3307 [0.5 credit]**Politics of Human Rights**

Politics of human rights in its historical and cultural context, including: early liberal theories of natural rights; utilitarian and Marxist critiques; contemporary rights debates; different generations of rights; feminism and women's rights; cultural relativism; state sovereignty; and, problems of implementation and enforcement.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3308 [0.5 credit]**Modern Political Thought**

A survey of trends in modern political thought, including some of liberalism, conservatism, neo-conservatism, Marxist and neo-Marxist socialism, communitarianism, postmodernism and globalization.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3309 [0.5 credit]**Modern Ideologies**

A survey of ideologies, mainly since 1900, including some of nationalism, utopian socialism, communism, fascism, populism, environmentalism and feminism.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3310 [0.5 credit]**Global Indigenous Politics**

An overview of regional and international Indigenous politics with case studies from the Americas, Europe, Asia, the Pacific; Africa. Topics include colonization, state formation, decolonial and postcolonial theories, Indigenous movements, the role of the United Nations, land rights, environment, self-determination, development, gender, and sexuality.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3311 [0.5 credit]**History of Muslim Political Thought**

A survey of political thought among Muslims, tracing the emergence and influence of juridical, philosophical and administrative approaches to politics on Muslim civilization.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3312 [0.5 credit]**Enlightenment Political Thought**

Major Enlightenment thinkers and major themes of Enlightenment political thought. Topics may include reason, religion, toleration, liberty, equality, the foundations of political authority, autonomy, morals, taste, progress, history or commerce.

Prerequisite(s): third-year standing.

Lecture three hours a week.

PSCI 3401 [0.5 credit]**Canadian Public Administration**

Study of the institutions and dynamics of government in Canada, with emphasis on political context, administrative reforms, policy development and ongoing challenges.

Analysis may include federal, provincial and/or municipal levels of government.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing and one of PSCI 2002, PSCI 2003, PSCI 2401, or PAMP 2000 (no longer offered).

Lectures three hours a week.

PSCI 3402 [0.5 credit]**Canadian Public Policy**

Policy communities and policy networks in Canada with particular attention paid to policy issues, the political environment, policy instruments, impact and outcomes.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and one of PSCI 2002, PSCI 2003, PSCI 2401, or PAMP 2000 (no longer offered).

Lectures three hours a week.

PSCI 3405 [0.5 credit]**Comparative Public Policy Analysis**

The formation and impact of public policy: a variety of political systems as well as a variety of policy areas. Emphasis on developing skills for the analysis of policy formation and impact.

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2101, PSCI 2400 (no longer offered), PSCI 2401, or PAMP 2001 and PAMP 2002, or PAMP 2000 (no longer offered).

Lectures three hours a week.

PSCI 3406 [0.5 credit]**Public Affairs and Media Strategies**

The public affairs and issue management strategies of corporations, government departments, and other institutions in Canada from a comparative perspective.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3407 [0.5 credit]**Public Opinion and Public Policy**

Theories about the origins and dynamics of public opinion, the ways in which public opinion influences government policy and decision-making, and how decision-makers are able to shape public opinion.

Prerequisite(s): PSCI 2701 and PSCI 2702.

Lectures three hours a week.

PSCI 3410 [0.5 credit]**Introduction to Political Management**

Introduction to the field of political management. The institutional, legislative and ethical context in which party strategists, campaign managers, pollsters, lobbyists and civil society operate. Related administrative and communications skills.

Also listed as POLM 3000 and COMS 3100.

Prerequisite(s): third-year standing.

Lecture three hours a week.

PSCI 3411 [0.5 credit]**Data Analysis for Governance: Formal Approaches and Practical Realities**

Finding and using data to make, manage and evaluate public policy. Emphasis is on developing data analysis skills, and using and applying substantive theories by working on projects with real-world applications.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2701 and PSCI 2702.

Lectures, discussions, presentations; three hours a week.

PSCI 3502 [0.5 credit]**Gender and Politics: Global South**

A contemporary approach to the role of gender in political systems of the South. Topics may include gender and development, human rights, social policies, globalization, state-civil society relations, political participation and citizenship.

Prerequisite(s): third-year standing and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2102, PSCI 2500 or PSCI 3307.

Lectures three hours a week.

PSCI 3600 [0.5 credit]**International Institutions**

Origins, structure and functioning of international institutions with emphasis on the United Nations as well as regional organizations. Topics include peace and security, international aid and development, human rights and the control of global resources.

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.

Lectures three hours a week.

PSCI 3601 [0.5 credit]**Theories of International Politics**

Examination of the major theoretical approaches to the study of international politics. Topics may include realism, liberalism, Marxism, constructivism, feminism, and poststructuralism.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2601.

Lectures three hours a week.

PSCI 3603 [0.5 credit]**Strategic Thought and International Security**

The ideas of classical and contemporary strategic thinkers. International security issues and concepts.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3606 [0.5 credit]**Canadian Foreign Policy**

The traditions, domestic influences, objectives, capabilities, and decision-making processes, and analysis of selected contemporary issues.

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2002, PSCI 2003, PSCI 2601 or PSCI 2602.

Lectures three hours a week.

PSCI 3607 [0.5 credit]**North American Security and Defence Policy**

The evolution of Canadian and U.S. security and defence policy as it pertains to North America. Contemporary issues and development.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3608 [0.5 credit]**Migration Governance**

Advanced introduction to the politics of human mobility and migration, including attempts by states and other actors to influence migration and mobility and emerging types of governance at the national, regional and global levels.

Prerequisite(s): third-year standing or permission of the Department.

Lecture three hours a week.

PSCI 3609 [0.5 credit]**Global Politics of Food**

Drawing on theories of international relations, political economy, and public policy-making, this course examines the global, national and local politics of food production and distribution. Topics include food security, free trade versus fair trade, the environmental sustainability of food systems, food sovereignty and food aid.

Prerequisite(s): third-year standing or permission of the Department.

Lecture three hours a week.

PSCI 3700 [0.5 credit]**Government and Politics of South Asia**

Patterns of colonialism, evolving political regimes and issues in development and foreign policy in the countries of South Asia, including India, Pakistan, Bangladesh, Sri Lanka, and other member states of SAARC.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2102.

Lectures three hours a week.

PSCI 3702 [0.5 credit]**Israeli-Palestinian Relations**

The origins and evolution of the Israeli-Palestinian conflict and peace process.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and one of GPOL 1500, PSCI 2601 or PSCI 2602.

Lectures three hours a week.

PSCI 3703 [0.5 credit]**Governing in the Global Economy**

The main approaches and policy issues in the political economy of advanced industrialized states. The relationship between state and market and the ways in which national states have responded to the pressures of governing in an increasingly interdependent global economy.

Prerequisite(s): third-year standing and one of GPOL 1500 or PSCI 2602.

Lectures three hours a week.

PSCI 3709 [0.5 credit]**Ancient and Medieval Political Thought**

The significance for political theory of the ancient and medieval controversies over nature/convention, power/knowledge, time/eternity, theory/practice, and science/mysticism. Thinkers such as Homer, the pre-Socratics, Plato and Aristotle, the neo-Platonists, Augustine, and the Scholastics.

Prerequisite(s): (PSCI 2301 and PSCI 2302) or permission of the Department.

Lectures three hours a week.

PSCI 3801 [0.5 credit]**Environmental Politics**

Environmental issues in contemporary political argument. Topics include: environmental movements and green parties, environmental ethics and animal rights, economic approaches to environmental management, the politics of sustainable development, and the international politics of the environment.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3802 [0.5 credit]**Globalization and Human Rights**

An examination of the various dimensions and meanings of globalization and its relationship with human rights. The main emphasis will be on the implications of the emerging global economy for economic, social, political and cultural rights.

Also listed as SOCI 3027, ANTH 3027.

Prerequisite(s): third-year standing and one of: GPOL 1500, SOCI 1010 [1.0], ANTH 1003[1.0], ANTH 1010[1.0], ISSC 1001[1.0], PSCI 2601, PSCI 2602, LAWS 2105, PHIL 2103 or (ANTH 1001 and ANTH 1002), or (SOCI 1001 and SOCI 1002).

Lectures three hours a week.

PSCI 3805 [0.5 credit]**Politics of Race**

The meaning, sources and practice of racialism, as well as efforts to combat it, in a comparative context. Case studies will include South Africa, the United States, and Canada.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3809 [0.5 credit]**Selected Topics in Political Science**

A lecture course on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.

Prerequisite(s): third-year standing.

Lectures three hours a week.

PSCI 3900 [1.0 credit]**Études dirigées**

Une programme de lectures choisies et de travaux écrits dans le domaine de spécialisation d'un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.

Prerequisite(s): third-year standing in the Political Science Mention : Français program.

PSCI 3905 [1.5 credit]**Washington Center Internship**

One-term internship at The Washington Center in D.C.; options in American politics, international affairs, and other areas. Evaluation by Washington Center faculty, but governed by Carleton University Political Science Department regulations. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210 and permission of the department.

PSCI 3906 [1.0 credit]**Full-Year Political Science Internship**

Internship gives students the opportunity to work with an organization whose focus relates to politics over a full academic year. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision.

Includes: Experiential Learning Activity

Precludes additional credit for GPOL 3100, PSCI 3907 and the Washington Internship.

Prerequisite(s): third-year Honours standing with a minimum Political Science CGPA of 9.0 or permission of the Department.

PSCI 3907 [0.5 credit]**One-Term Political Science Internship**

Internship gives students the opportunity to work with an organization whose focus relates to politics over one academic term. Students complete a research paper related to their internship. Students must identify an organization to host the internship and a faculty member to provide supervision.

Includes: Experiential Learning Activity

Precludes additional credit for GPOL 3100, PSCI 3906 and the Washington Internship.

Prerequisite(s): third-year Honours Standing with a minimum Political Science CGPA of 9.0 or permission of the Department.

PSCI 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

PSCI 4003 [0.5 credit]**Politics and the Media**

The role of the mass media in the Canadian political system from a comparative perspective.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4005 [0.5 credit]**Canadian Federalism**

The evolution and contemporary operation of the Canadian federal system; the social, political, economic, and structural features underlying its operational performance, resilience in crisis, and potential for adaptation.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, PSCI 2003 or PSCI 2101.

Also offered at the graduate level, with different requirements, as PSCI 5101, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4006 [0.5 credit]**Legislatures and Representation in Canada**

The role of Parliament and of the individual M.P. in terms of policy making, party discipline, and differing conceptions of representation.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5006, for which additional credit is precluded.

Seminar three hours per week.

PSCI 4008 [0.5 credit]**National Security and Intelligence in the Modern State**

The state's response to foreign espionage, alleged subversion, terrorism, and counterintelligence. Major focus on the Canadian experience, but with extensive use of materials chronicling the practices of KGB, CIA, BIS, ASIO, MOSSAD, etc.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4009 [0.5 credit]**Quebec Politics**

Society, culture, economy and politics in Quebec. Special attention to the politically relevant changes since 1960 and the central place of Quebec within the Canadian federation.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4010 [0.5 credit]**Executive Power in Canadian Politics**

Consideration of prime ministers, premiers, cabinet ministers and senior public service leadership in Canadian politics and government.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5010, for which additional credit is precluded.

PSCI 4103 [0.5 credit]**The Modern State**

A survey of recent thinking about the state in western societies drawing on perspectives such as those of feminists, Marxists, Weberians, poststructuralists and others. Topics may include: the rise of the modern state, economic governance, the public sphere, citizenship, sovereignty and territoriality.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4104 [0.5 credit]**Development in the Global South - Theory and Practice**

Different theoretical approaches to the concept of development in the Global South and their relevance for selected countries in Latin America, Africa and Asia.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4105 [0.5 credit]**Selected Problems in Development in the Global South**

Topics may include global issues of trade, finance and production, changing patterns of foreign aid, and the role of microfinance, mining, non-governmental organizations, migration, anti-poverty programs and activism in promoting development.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4107 [0.5 credit]**Political Participation in Canada**

The causes and implications of political participation by individuals with special reference to Canada. Topics include citizen participation in campaign and party organizations, political protest movements, interest groups, and community associations.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).

Seminar three hours a week.

PSCI 4109 [0.5 credit]**The Politics of the Canadian Charter of Rights and Freedoms**

The genesis and impact of the Charter of Rights and Freedoms. Particular emphasis on the politics of aboriginal, language, and equality rights.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4203 [0.5 credit]**Southern Africa After Apartheid**

The pathology of apartheid, the reasons for its end, and prospects for democratization and development in Southern Africa in the era of globalization.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5203, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4204 [0.5 credit]**Elections**

The conduct and meaning of elections in contemporary states. Attention to the connection of elections to concepts of representation, policy mandates, and political parties, and to electoral systems and referendums.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2003, PSCI 2101, PSCI 2102, PSCI 2700, or (PSCI 2701 and PSCI 2702).

Also offered at the graduate level, with different requirements, as PSCI 5204, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4206 [0.5 credit]**Indigenous Politics of North America**

Issues of governance regarding the original peoples of Canada, Mexico and the United States since the European invasion. Contemporary movements for restoration of cultural, political, socio-economic, land and self-governance rights, emphasizing domestic and international strategies.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1500, GPOL 2500, PSCI 2001, PSCI 2002, PSCI 2003, PSCI 2101, PSCI 2102, or PSCI 3205.

Also offered at the graduate level, with different requirements, as PSCI 5100, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4207 [0.5 credit]**Globalization, Adjustment and Democracy in Africa**

The nature of global pressures in Africa, as states go through political and economic change.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5107, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4209 [0.5 credit]**Westminster Democracies: Parliaments, Parties and Elections**

Examination of party and parliamentary democracy in the five principal Anglophone parliamentary democracies:

Australia, Canada, Ireland, New Zealand and the United Kingdom. Consideration is given to the effects of different electoral systems and institutional arrangements on electoral politics, political participation, and party organization.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 2500, PSCI 2003, PSCI 2101, or PSCI 2102.

Seminar three hours a week.

PSCI 4210 [0.5 credit]**Political Identity through Graphic Novels**

Examination of the sources and dynamics of political identity through the medium of graphic novels and graphic memoirs. Themes may include collective memory, genocide, prostitution, violent conflict, civil rights, race and ethnicity, revolution, Indigenous issues, mental health, and gender and sexuality.

Prerequisite(s): fourth year standing or permission of the Department.

Seminar three hours a week.

PSCI 4211 [0.5 credit]**Op-Ed Writing and Social Media as Political Engagement**

The art and craft of political opinion writing and social-media engagement. An examination of contemporary online activism, interpersonal and collective online dynamics, and an imparting of the skills required for persuasive and well-researched op-ed writing.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4302 [0.5 credit]**Political Thought in the Modern Muslim Middle East**

Contemporary secular and religious responses to the challenges of modernity. Readings include writings of Arab, Turkish, and Iranian intellectuals.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of (PSCI 2301 and PSCI 2302) or PSCI 3311.

Also offered at the graduate level, with different requirements, as PSCI 5305, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4303 [0.5 credit]**Governmentality and Politics**

Examination of Foucault's concept of governmentality and work which has developed this idea, especially the relevance of governmentality for global political studies.

Topics may include sovereignty, biopolitics, technopolitics, neoliberalism and citizenship.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5303 and SOCI 5407, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4308 [0.5 credit]**History of Political Enquiry**

An examination of methods adopted by major thinkers in the history of political philosophy, amidst changing understandings of metaphysics and science. Thinkers to be considered may include Plato, Aristotle, Descartes, Bacon, Kant, Hegel, Nietzsche, and Heidegger, among others.

Precludes additional credit for PSCI 4304 (no longer offered).

Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department.

Seminar three hours a week.

PSCI 4309 [0.5 credit]**Contemporary Approaches to Political Enquiry**

An examination of contemporary critiques and developments in modern science and social science.

Thinkers to be considered may include Gadamer, Strauss, Oakeshott, Voegelin, Polanyi, Feuerabend, Heidegger, Kojève, Schmitt, Foucault, and Derrida.

Precludes additional credit for PSCI 4304 (no longer offered).

Prerequisite(s): PSCI 2301 and PSCI 2302 or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4311 [0.5 credit]**Political Theories of Democracy and Empire I**

An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Thucydides, Plato, Aristotle and Xenophon.

Precludes additional credit for PSCI 4310 (no longer offered).

Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department.

Seminar three hours a week.

PSCI 4312 [0.5 credit]**Political Theories of Democracy and Empire II**

An exploration of how ancient and modern conceptions of empire differ and how the pursuit of empire abroad can undermine good government at home in political theories including Machiavelli, Hobbes, Hegel, Tocqueville and Heidegger.

Precludes additional credit for PSCI 4310 (no longer offered).

Prerequisite(s): fourth-year Honours standing, (PSCI 2301 and PSCI 2302) and PSCI 4311 or permission of the Department.

Seminar three hours a week.

PSCI 4316 [0.5 credit]**Contemporary Political Theory I**

Focus on the main currents of political thought in late and post-modernity; the relation between classical and modern philosophy, tyranny and technology, existentialism and nihilism. Thinkers such as Strauss, Kojève, Nietzsche, Arendt, Heidegger and Schmitt may be read.

Precludes additional credit for PSCI 4305 (no longer offered).

Prerequisite(s): fourth-year Honours standing and (PSCI 2301 and PSCI 2302) or permission of the Department.

Seminar three hours a week.

PSCI 4317 [0.5 credit]**Contemporary Political Theory II**

Continues and expands themes examined in PSCI 4316, and will include post-modernism, investigations of technology and globalization, terrorism and trans-humanism. Representative thinkers may include Derrida, Foucault, Deleuze, Bataille, Rosen, Voegelin, Habermas and Steiner.

Precludes additional credit for PSCI 4305 (no longer offered).

Prerequisite(s): fourth-year Honours standing; PSCI 2301, PSCI 2302 and PSCI 4316, or permission of the Department.

Seminar three hours a week.

PSCI 4318 [0.5 credit]**Concepts of Political Community I**

Critical survey of concepts of political community, including the common good, justice, citizenship, leadership, democracy, and legitimacy, from ancient, modern, and contemporary political theory.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5308, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4319 [0.5 credit]**Concepts of Political Community II**

A continued critical survey of concepts of political community, including the common good, justice, citizenship, statesmanship, democracy, and legitimacy, from ancient, modern, and contemporary political theory.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5309, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4400 [0.5 credit]**Socio-Technical Change and Public Policy Design**

Joint implications of contemporary science, technology and demographics for the design of public policy. The main emphasis of the course will be general patterns of change and design relating to public policy.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4403 [0.5 credit]**Reproductive Rights Policy in North America**

The interaction between social movements, legislatures and courts in formulating reproductive rights policy in Canada, the U.S. and Mexico.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5407, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4404 [0.5 credit]**The Design and Evolution of Public Institutions**

An examination of the emergence, development and collapse of institutional collective action in a broad historical framework, with attention to probable future scenarios for change. Readings are taken from anthropology, economics, history and empirical political theory.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4407 [0.5 credit]**Public Policy: Content and Creation**

The content and creation of public policy. Focus on the explanation, prediction and design of policy. Perspectives and examples are drawn from a variety of frameworks and from both Canadian and non-Canadian contexts.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2400 (no longer offered), PSCI 2401, PSCI 3402, PSCI 3405, PSCI 3409 or PAMP 2000 (no longer offered), or PAMP 2001 and PAMP 2002.

Seminar three hours a week.

PSCI 4408 [0.5 credit]**Public Affairs Management and Analysis**

Theories and practice in the management of public affairs, including the environment and administration of the public sector, public opinion, and public communications.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminars three hours a week.

PSCI 4409 [0.5 credit]**Issues in Development Management**

An examination of the application of organization theory to policy implementation and evaluation for developing and transitional systems, with an emphasis on the role of cultural differences and divergent value systems in development management.

Prerequisite(s): ECON 3508 and fourth-year standing in the B.P.A.P.M. program and registration in either the International Studies specialization or the Development Studies specialization or permission of the Department.

Lectures or seminars three hours a week.

PSCI 4500 [0.5 credit]**Gender and Globalization**

How globalization affects women's involvement in politics and how they organize to conceptualize and pursue gender justice in official politics; grass roots projects and cultural transformations; ideology; stand-alone movements; and mixed-sex movements like nationalism and democratization.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 2500, PSCI 3500, PSCI 3502.

Seminars three hours a week.

PSCI 4501 [0.5 credit]**Politics of Identity in Europe and the Russian Area**

The relationships between political transformation, identity-building, ethnicity, and gender politics in post-communist states, considered in comparison with select countries in Central and/or Western Europe.

Includes: Experiential Learning Activity

Also listed as EURR 4205.

Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2101, PSCI 2102, PSCI 2500, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.

Seminar three hours a week.

PSCI 4502 [0.5 credit]**Post-Soviet States and Societies**

The relationship between social forces and state structures at both the national and local levels in the USSR and the post-communist states.

Also listed as EURR 4002.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 3208, PSCI 3209, PSCI 3704, PSCI 3705, or HIST 2600.

Seminar three hours a week.

PSCI 4503 [0.5 credit]**Politics of Central Eurasia**

Examination of the Caucasus and Central Asia, from Chechnya to former Soviet republics of the region, Afghanistan and Chinese Turkestan. Interests of Russia, China, and the United States. Emphasis on underdevelopment, oil and gas, terrorism, Islam.

Includes: Experiential Learning Activity

Also listed as EURR 4207.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4504 [0.5 credit]**Politics of the Caucasus and Caspian Basin**

Examination of the South Caucasus (Azerbaijan, Georgia, Armenia), the Russian-held North Caucasus, including Chechnya, and relations with Iran. Emphasis on state and society, oil and gas, transregional communications, interests of western powers, ethnic relations.

Includes: Experiential Learning Activity

Also listed as EURR 4209.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4505 [0.5 credit]**Transitions to Democracy**

A comparative analysis of processes of democratization. Diverse theoretical approaches to understanding the timing, causes, nature, and limitations of democratization. Examples from Europe and Russia, Latin America, Africa, and Asia.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, GPOL 2500, PSCI 2102, PSCI 3100, PSCI 3204, PSCI 3208, PSCI 3209, PSCI 3500, PSCI 3502, PSCI 3704, or PSCI 3705.

Seminar three hours a week.

PSCI 4506 [0.5 credit]**Women and Politics in North America**

The efforts of women in North America to increase their political role through public activism, including in party organizations, social movements, legislatures, courts and the executive branch of government.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4507 [0.5 credit]**The Balkans since 1989**

Selected topics in Balkan politics and society since the collapse of communism in 1989, focusing on the democratic transition and the EU accession process. The legacies of communist rule, democratization and the many national questions that still exist in the region.

Also listed as EURR 4102.

Prerequisite(s): fourth year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4601 [0.5 credit]**Foreign Policies of Soviet Successor States**

The foreign policies of the USSR and of Russia and selected other successor states, with special emphasis on the search for a new security order.

Also listed as EURR 4208.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of EURR 2001, EURR 2002, GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3208, PSCI 3209, PSCI 3600, PSCI 3603, PSCI 3703.

Seminar three hours a week.

PSCI 4603 [0.5 credit]**Analysis of International Political Economy**

Various theoretical approaches to the study of the international political economy, with a focus on historical development and changing international structures.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.

Seminar three hours a week.

PSCI 4604 [0.5 credit]**Selected Problems in International Political Economy**

Contemporary problems and issues in the international political economy, with particular attention given to advanced industrial countries.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.

Seminar three hours a week.

PSCI 4605 [0.5 credit]**Gender in International Relations**

Analysis of feminist approaches to international relations. Substantive issues include the role of women in war and militarization, the gender dimensions of global political economy and gender issues in international development.

Prerequisite(s): fourth-year Honours standing or permission of the Department and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3500, PSCI 3303 or PSCI 3502.

Seminars three hours a week.

PSCI 4606 [0.5 credit]**American Foreign Policy**

The sources, trends and conflicting interpretations of the international roles of the United States since World War II. Foreign policy machinery and processes assessed in terms of the relative importance of perceptions, ideology, self-interest, and domestic and foreign pressures.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2101, PSCI 2601, PSCI 2602, PSCI 3200, PSCI 3201, PSCI 3603, PSCI 3703.

Seminar three hours a week.

PSCI 4607 [0.5 credit]**Politics of North America**

A seminar examining the evolving relationship between Canada, the United States and Mexico, including political, economic, social, environmental and defence aspects.

Includes: Experiential Learning Activity

Precludes additional credit for PSCI 5607.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4608 [0.5 credit]**European Integration and European Security**

A seminar focusing on issues related to the formation of supra-national decision-making structures in Europe.

Includes: Experiential Learning Activity

Also listed as EURR 4104.

Prerequisite(s): fourth-year Honours standing or permission of the department.

Also offered at the graduate level, with different requirements, as PSCI 5608, and as EURR 4104/5104, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4609 [0.5 credit]**Selected Topics in European Integration Studies**

A seminar focusing on selected topics related to European integration in the post-World War II period.

Also listed as EURR 4106.

Prerequisite(s): fourth-year Honours standing or permission of the department.

Seminar three hours a week.

PSCI 4610 [0.5 credit]**Politics of Migration Management**

Seminar course that critically engages with innovative policies and instruments under the umbrella of 'migration management', and the proliferation of actors (states, international organizations, NGOs, private companies etc) involved in shaping and contributing to migration governance.

Prerequisite(s): fourth-year Honours standing or permission of the department.

Seminar three hours a week.

PSCI 4701 [0.5 credit]**Intermediate Polimetrics for Micro Data**

Research designs and statistical techniques primarily used in analyzing survey data. Selected topics may vary from year to year. Students doing Honours papers based on micro data are advised to take this course.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5701, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4702 [0.5 credit]**Intermediate Research Methods for Applied Political Science**

Applied methods for policy, politics and public affairs.

Primarily quantitative, but may have qualitative elements.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2700 or (PSCI 2701 and PSCI 2702), or permission of the Department.

Also offered at the graduate level, with different requirements, as PSCI 5702, for which additional credit is precluded.

Seminar three hours a week.

PSCI 4800 [0.5 credit]**Advanced International Relations Theory**

Close reading and analysis of theoretical research in the academic discipline of International Relations; may include analysis of methodology, normative and critical theory, and key theoretical concepts such as anarchy, sovereignty, power, inequality, coloniality, security, gender.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 2602, PSCI 3601, GPOL 3000.

Seminar three hours a week.

PSCI 4801 [0.5 credit]**Selected Problems in Global Politics**

The application of international relations theories to specific global problems, both historical and contemporary. Selected issues may focus on one or more of conflict analysis, terrorism, the environment, migration, globalization and global civil society.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2601, PSCI 2602, PSCI 3107, PSCI 3600, PSCI 3601, PSCI 3603, and PSCI 3703.

Seminar three hours a week.

PSCI 4803 [0.5 credit]**Foreign Policies of Major East Asian Powers**

The foreign policies of the East Asian powers, with special attention to China and Japan; an analysis of the domestic sources of policy, capabilities, interests, decision-making processes and foreign relations.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2102, PSCI 2601, PSCI 2602, PSCI 3102, or PSCI 3103.

Seminar three hours a week.

PSCI 4805 [0.5 credit]**Political Economy of Global Money and Finance**

An exploration of the organization of the global monetary and financial system. Issues covered include the relationship between global finance and the state, the politics of world money, and the problems associated with regulating internationally-active financial institutions.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours or permission of the Department, and one of GPOL 1000, GPOL 1500, PSCI 2602, PSCI 3600, or PSCI 3703.

Also offered at the graduate level, with different requirements, as PSCI 5802, for which additional credit is precluded.

Seminars three hours a week.

PSCI 4806 [0.5 credit]**Transatlantic Security Issues**

NATO as a political and military alliance. NATO and 21st century threats. Security roles for the E.U. Broader transatlantic security issues.

Precludes additional credit for PSCI 5803.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2601, PSCI 3603, PSCI 3607, or GPOL 1500.

Seminars three hours a week.

PSCI 4807 [0.5 credit]**Politics of Citizenship and Migration**

How flows of people -- migrants, temporary workers and refugees -- challenge state sovereignty, citizenship and belonging. Emphasis on role of the state, supranational structures and international organizations in migration and mobility.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4808 [0.5 credit]**Global Environmental Politics**

Global politics of transboundary environmental issues such as biodiversity protection, climate change and desertification. The perspectives, actors, institutions and economic relationships affecting international policy responses to these issues.

Prerequisite(s): fourth-year Honours standing or permission of the Department, and one of PSCI 2401, PSCI 2601, PSCI 2602, or PSCI 3801.

Seminar three hours a week.

PSCI 4809 [0.5 credit]**Honours Seminar on a Selected Topic in Political Science**

A seminar on a selected contemporary topic in Political Science. Topic may vary from year to year and will be announced in advance of the registration period by the Department of Political Science.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4811 [0.5 credit]**International Security and Terrorism**

Conventional approaches to international security; international security in the post-Cold War era; theories and debates on terrorism, its causes and types, and its impact on contemporary global security.

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4817 [0.5 credit]**International Politics of Forced Migration**

The relationship between international politics and the causes, consequences and responses to forced migration, internal displacement and refugees. Seminars and case studies are used to examine the evolution of the global refugee regime and the challenges it faces today.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4819 [0.5 credit]**Latin America and the World**

Latin America's changing relations with states, international institutions and non-state actors in the Global North and South. Topics may include security, South-South cooperation, trade, investment and transnational migration and drug trafficking.

Also listed as LACS 4819.

Prerequisite(s): fourth year standing or permission from the Department.

Seminar three hours a week.

PSCI 4901 [0.5 credit]**Tutorial in a Selected Field**

Tutorials or reading courses on selected topics in which seminars are not available.

Prerequisite(s): permission of the Department and agreement of an instructor.

Tutorial hours arranged.

PSCI 4902 [0.5 credit]**Tutorial in a Selected Field**

Tutorials or reading courses on selected topics in which seminars are not available.

Prerequisite(s): permission of the Department and agreement of an instructor.

Tutorial hours arranged.

PSCI 4905 [0.5 credit]**Washington Center Seminar I**

A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton's Department of Political Science.

Includes: Experiential Learning Activity

Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.

Seminar three hours a week.

PSCI 4906 [0.5 credit]**Washington Center Seminar II**

A seminar offered by The Washington Center, governed by Carleton regulations, and co-ordinated by Carleton's Department of Political Science.

Includes: Experiential Learning Activity

Prerequisite(s): selection to The Washington Center Internship Program and one of PSCI 2200, PSCI 3200, or PSCI 3210.

Seminar three hours a week.

PSCI 4908 [1.0 credit]**Honours Research Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Political Science with a Political Science CGPA of 9.00 or better, or permission of the Supervisor of Undergraduate Studies.

PSCI 4909 [1.0 credit]**Mémoire de recherche**

Un travail de recherche dans le domaine de spécialisation d'un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.

Prerequisite(s): fourth-year Honours standing in the Political Science Mention : Français program.

Portuguese (PORT)

Portuguese (PORT) Courses**Placement for Language Students**

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

PORT 1010 [0.5 credit]

First-Year Portuguese I

For students with no knowledge of Portuguese. Oral skills; basic reading and writing skills. Compulsory attendance. Precludes additional credit for PORT 1110. Four hours a week.

PORT 1020 [0.5 credit]

First-Year Portuguese II

Continuation of first-year Portuguese. Oral skills; basic reading and writing skills. Compulsory attendance. Precludes additional credit for PORT 1110. Prerequisite(s): grade of C or higher in PORT 1010 or permission of the School. Four hours a week.

PORT 1110 [1.0 credit]

Intensive First-Year Portuguese

For students with no knowledge of Portuguese. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for PORT 1010 and PORT 1020. Eight hours a week (one term).

PORT 2110 [1.0 credit]

Intensive Second-Year Portuguese

Further study of Portuguese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Prerequisite(s): grade of C or higher in PORT 1110 or PORT 1020, or permission of the School. Eight hours a week (one term).

PORT 3110 [1.0 credit]

Intensive Third-Year Portuguese

Continuation of the study of Portuguese to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in PORT 2110, or permission of the School. Six hours a week (one term).

PORT 4110 [1.0 credit]

Intensive Fourth-Year Portuguese

Advanced spoken and written Portuguese with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance. Prerequisite(s): grade of C or higher in PORT 3110, or permission of the School. Six hours a week (one term).

Psychology (PSYC)

Psychology (PSYC) Courses

PSYC 1001 [0.5 credit]

Introduction to Psychology I

A survey of topics associated with psychology's role as a natural science, including neuroscience, cognition, and learning. Precludes additional credit for PSYC 1000. Lecture three hours a week.

PSYC 1002 [0.5 credit]

Introduction to Psychology II

A survey of topics associated with psychology's role as a social science, including social psychology, personality, clinical psychology, and mental health. Precludes additional credit for PSYC 1000. Prerequisite(s): PSYC 1001. Lecture three hours a week.

PSYC 2001 [0.5 credit]

Introduction to Research Methods in Psychology

A general introduction to research methodologies employed within contemporary psychology. Topics covered include research designs (experimental, quasi-experimental) and techniques (observations, surveys), basic descriptive statistics, and how to interpret and report research findings. Precludes additional credit for NEUR 2001 and PSYC 2000 (no longer offered). Prerequisite(s): PSYC 1001 and PSYC 1002. Lecture three hours a week. May include laboratories.

PSYC 2002 [0.5 credit]

Introduction to Statistics in Psychology

A general introduction to statistical techniques employed within contemporary psychology. Topics include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square). Precludes additional credit for NEUR 2002. Prerequisite(s): PSYC 2001. Lecture three hours a week. May include laboratories.

PSYC 2100 [0.5 credit]

Introduction to Social Psychology

Introduction to social psychology, including a survey of theories, issues, methods, and findings. This course will explore how social situations may influence people's thoughts, feelings, and behaviours. Topics may include social cognition, self-knowledge, persuasion, interpersonal attraction, aggression, and prosocial behaviour. Precludes additional credit for SOCI 2150. Prerequisite(s): PSYC 1001 and PSYC 1002. Lectures three hours a week.

PSYC 2301 [0.5 credit]**Introduction to Health Psychology**

Introduction to health psychology, including a survey of theories, issues, methods, and findings. Using a multidisciplinary approach, topics may include the reciprocal interactions among physical health and illness, and psychological factors, including emotional well-being, coping and appraisal processes.

Precludes additional credit for PSYC 3406.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2307 [0.5 credit]**Human Neuropsychology I**

Introduction to study of brain-behaviour relationships, including a survey of theories, issues, methods, and findings. Topics may include basic anatomy and physiology of the human nervous system, including sensory and motor functions. Neural basis of language, perception, emotion, learning, memory, decision making and social cognition.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2400 [0.5 credit]**Introduction to Forensic Psychology**

Introduction to forensic psychology, including a survey of theories, issues, methods, and findings. Topics covered may include development of offending, eyewitness testimony, victim studies, risk assessment, offender rehabilitation, offender classification, and police studies.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2500 [0.5 credit]**Foundations of Developmental Psychology**

Introduction to developmental psychology, including a survey of theories, issues, methods, and findings. Topics may include biological underpinnings and genetics, as well as selected aspects of language, cognitive, moral, emotional, and social development.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2600 [0.5 credit]**Introduction to the Study of Personality**

Introduction to the study of personality, including a survey of theories, issues, methods, and findings. Explores the factors that contribute to people's personality and influence how they interact with others. Topics may include traits, motives, the self, physiology, the unconscious, relationships, stress and coping.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2700 [0.5 credit]**Introduction to Cognitive Psychology**

Introduction to cognitive processes, including a survey of theories, issues, methods and findings. Topics covered may include pattern recognition, attention, imagery, learning (animal and human), memory, language, and thinking.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 2801 [0.5 credit]**Organizational Psychology I**

Introduction to the study of organizational psychology, including a survey of theories, issues, methods, and findings. Examines individual and group behaviour in organizational settings. Topics may include understanding work-related attitudes, behaviour, motivation, and stress, personnel selection, personality in the workplace, organizational justice, and leadership.

Precludes additional credit for PSYC 3105, PSYC 3803 (no longer offered).

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours per week.

PSYC 3000 [1.0 credit]**Design and Analysis in Psychological Research**

Techniques in data analysis, probability, sampling distributions, and procedures of estimation. Topics include classical, Bayesian, and distribution free approaches to hypothesis testing, linear regression and curve fitting, and analysis of variance methods in experimental design. Techniques are applied with appropriate statistical software (e.g., SPSS, Excel).

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing, PSYC 2001, and PSYC 2002.

Lectures and tutorial four hours a week.

PSYC 3001 [0.5 credit]**Psychological Testing**

An introduction to theory and issues pertaining to psychological tests. Topics include the creation, assessment, scoring, and interpretation of results across different testing formats (questionnaires, surveys, structured interviews, performance-based measurements). Classical and modern techniques will be incorporated. Students will apply psychological testing theory through assignments.

Prerequisite(s): PSYC 2001 and PSYC 2002.

Lectures three hours a week.

PSYC 3100 [1.0 credit]**Social Psychology (Honours Seminar)**

An introduction to theory and research in social psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2100, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3104 [0.5 credit]**Intergroup Relations: The Psychology of Conflict and Violence**

In-depth coverage of the social psychology of relations within and between large societal groups. Topics may include social identity, stereotyping, prejudice, and intergroup emotions, with emphasis on their role in promoting conflict and paths to pro-social intergroup relations.

Also listed as SOWK 3103.

Precludes additional credit for PSYC 3103 (no longer offered).

Prerequisite(s): PSYC 2100.

Lectures three hours per week.

PSYC 3106 [0.5 credit]**Close Relationships**

A consideration of relationship science, with a focus on social psychological theory and empirical approaches to the study of close relationships such as dating and marital relationships, and friendships. Topics may include relationship initiation, relationship maintenance, and coping with the dissolution of relationships.

Prerequisite(s): PSYC 2100.

Lectures three hours per week.

PSYC 3300 [1.0 credit]**Health (Honours Seminar)**

An applied introduction to theory and research in health psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2301, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3301 [0.5 credit]**Sport and Performance Psychology**

How psychological processes influence outcomes across sport and performance environments. Topics may include self-confidence, goal-setting, arousal regulation, imagery, group dynamics, burnout, injury recovery, and how person and situational factors affect the pursuit of excellence.

Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.

Lectures three hours a week.

PSYC 3302 [0.5 credit]**Positive Psychology**

A review of theoretical, historical, and empirical scholarship in positive psychology. Drawing widely across traditional sub-disciplines, content focuses on human strengths, well-being, resilience, and virtue to understand internal, external, and developmental contributors to health and happiness.

Prerequisite(s): one of PSYC 2100, PSYC 2301, PSYC 2500, PSYC 2600.

Lectures three hours a week.

PSYC 3307 [0.5 credit]**Human Neuropsychology II**

Cortical metabolism and research methods for assessment of cortical function, neuropsychological testing in the context of neurological, psychiatric and cognitive disorders caused by nervous system damage or genetic anomaly.

Precludes additional credit for PSYC 3207 (no longer offered).

Prerequisite(s): PSYC 2307.

Lectures three hours a week.

PSYC 3400 [1.0 credit]**Forensic Psychology (Honours Seminar)**

An applied introduction to theory and research in forensic psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2400, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3402 [0.5 credit]**Criminal Behaviour**

A review of theoretical and empirical research in the study of criminal behaviour. Examination of offender assessment and classification, prevalence and types of offenders, and effectiveness of offender treatment including understanding specific populations of offenders such as Indigenous offenders, women offenders and violent offenders.

Prerequisite(s): PSYC 2400.

Lectures three hours a week.

PSYC 3403 [0.5 credit]**Addiction**

Neurobiological and social bases of drug and behavioural addictions. Contemporary theoretical approaches to addiction; approaches to current prevention and treatment. Prerequisite(s): one of PSYC 2301, PSYC 2307, PSYC 2400.

Lectures three hours a week.

PSYC 3404 [0.5 credit]**Police Psychology**

Critical examination of theory and empirical research in the area of police psychology. Topics covered may include police culture, police selection, police suicide, police personality, stress debriefing, fitness evaluations, police training, crisis negotiations, and investigative techniques. Precludes additional credit for PSYC 4402 (no longer offered).

Prerequisite(s): PSYC 2400.

Lectures three hours per week.

PSYC 3405 [0.5 credit]**Psychology of Motivation and Emotion**

This course will explore motivational and emotional factors involved in human behaviour emphasizing various perspectives, theories, and research pertaining to physiological, cognitive, and social needs. Topics may include what factors motivates people, how motivation changes over time, and how one person can motivate another individual.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 3500 [1.0 credit]**Developmental Psychology (Honours Seminar)**

An introduction to theory and research in developmental psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Includes: Experiential Learning Activity Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2500, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3505 [0.5 credit]**Exceptional Children**

An overview of childhood exceptionalities including intellectual differences, communication disorders, sensory and physical impairments, developmental and behavioural problems.

Prerequisite(s): PSYC 2500.

Lectures three hours a week.

PSYC 3506 [0.5 credit]**Cognitive Development**

Human cognitive development is examined with a focus on memory, thinking and language through the life span. Topics may include perceptual and language development, emergent literacy, development of strategies and development of reading and arithmetic skills.

Prerequisite(s): PSYC 2500 or PSYC 2700.

Lectures three hours a week.

PSYC 3507 [0.5 credit]**Social Development**

Development of the individual with a focus on social cognition and social behaviour. Topics may include the role of temperament in development, parental roles, siblings and peers in social/emotional development, development of prosocial and aggressive behaviour, moral development and development of self and other understanding.

Prerequisite(s): PSYC 2500.

Lectures three hours a week.

PSYC 3508 [0.5 credit]**Child Language**

Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and the relative contributions of the environment, cognitive development and inborn knowledge to this development.

Includes: Experiential Learning Activity

Also listed as LING 3603.

Precludes additional credit for LALS 2603 (no longer offered).

Prerequisite(s): LING 1001 and second-year standing, or permission of the instructor.

Lectures three hours per week.

PSYC 3509 [0.5 credit]**Adolescence and Emerging Adulthood**

The physical, cognitive, social and moral development of adolescents and emerging adults in multiple contexts including family, peers, media and culture. Major theories and contemporary issues and concerns.

Prerequisite(s): PSYC 2500.

Lectures three hours a week.

PSYC 3600 [1.0 credit]**Personality (Honours Seminar)**

An introduction to theory and research in personality psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2600, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3603 [0.5 credit]**Psychology of Women**

An examination of theories and research regarding the similarities and differences in women's and men's psychological processes. Psychological issues relevant to women (e.g., women's health concerns, women's sexuality, violence toward women and children) will be examined as well as feminist and traditional research methods.

Prerequisite(s): one of PSYC 2100, PSYC 2500, PSYC 2600.

Lectures three hours a week.

PSYC 3604 [0.5 credit]**Clinical Psychology and Mental Illness**

History of the concept of mental illness. Theory and selected research dealing with the nature and etiology of mental illness.

Prerequisite(s): PSYC 2301, PSYC 2500 or PSYC 2600.

Lectures three hours a week.

PSYC 3700 [1.0 credit]**Cognition (Honours Seminar)**

An introduction to theory and research in cognitive psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis.

Includes: Experiential Learning Activity

Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2700, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department.

Seminars and laboratories six hours a week.

PSYC 3702 [0.5 credit]**Perception**

Introduction to theory, research methods and principles associated with the study of perceptual processes.

Examples of how perceptual principles can be applied to solve problems in communications, transportation, medicine, industrial design, manufacturing, marketing, food and beverage industries (flavoring, blending, and scenting, etc.).

Precludes additional credit for NEUR 3202.

Prerequisite(s): PSYC 1001 and PSYC 1002.

Lectures three hours a week.

PSYC 3709 [0.5 credit]**Language Processing and the Brain**

Introduction to adult language processing and neurolinguistics. Psychological processes underlying speech production and perception, word recognition and sentence processing. Biological foundation and neuro-cognitive mechanisms of language. Experimental techniques and methodologies of current psycholinguistic studies.

Includes: Experiential Learning Activity

Also listed as LING 3601.

Precludes additional credit for LALS 2601 and LALS 3601 (no longer offered).

Prerequisite(s): LALS 1000 or LALS 1001 or LING 1001 or PSYC 2700 and second-year standing, or permission of the instructor.

Lectures three hours a week.

PSYC 3710 [0.5 credit]**Introduction to Human Factors**

Theoretical foundation, philosophy and practical application of techniques for analyzing from a psychological perspective how people interact with designed environments. A major goal is to determine how these environments should be designed to suit human capabilities.

Precludes additional credit for PSYC 2800 (no longer offered).

Prerequisite(s): PSYC 2001 and PSYC 2002.

Lecture three hours a week.

PSYC 3801 [0.5 credit]**Organizational Psychology II**

Advanced coverage of the current theory and practices in Organizational Psychology. Selected topics may include workplace socialization, job attitudes, deviant work behaviours, leadership, teams and group dynamics, work-related stress and health, and organizational change and development.

Prerequisite(s): PSYC 2801.

Lectures three hours per week.

PSYC 3802 [0.5 credit]**Transition to Career**

Within the context of an active learning environment, examines traditional and current models in career psychology. Topics may include the concepts of change and transitions, self-assessments, vocational psychology, and workplace onboarding. Students will examine their personal and professional transition from university to the work world.

Includes: Experiential Learning Activity

Prerequisite(s): third or fourth year standing in Psychology.

Lectures three hours a week.

PSYC 3805 [1.0 credit]**Organizational Psychology (Honours Seminar)**

An introduction to theory and research in organizational psychology. Activities include reading and assessing the appropriate literature, designing studies and experiments, conducting data analyses, and producing APA style reports. Research ethics and graduate studies are also addressed. Taught in preparation of fourth year thesis. Prerequisite(s): PSYC 2001, PSYC 2002, PSYC 2801, third-year Honours standing in Psychology with a CGPA of 9.0 or higher in the major and permission of the Department. Seminars and laboratories six hours a week.

PSYC 3901 [0.5 credit]**Practicum in Psychology**

Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues. Includes: Experiential Learning Activity Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3902 [0.5 credit]**Practicum in Psychology**

Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues. Includes: Experiential Learning Activity Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3905 [1.0 credit]**Practicum in Psychology**

Experiential learning in psychology via field placement. Students pursue personal learning outcomes focused on the application of psychology within the community. Assignments promote ongoing reflection and the sharing of what has been learned with colleagues. Includes: Experiential Learning Activity Prerequisite(s): Third- or fourth-year standing in Psychology with a CGPA of 7.0 or higher in the major and permission of the Department.

PSYC 3999 [0.0 credit]**Co-operative Work Term**

Co-operative Work Term. Includes: Experiential Learning Activity Work Term.

PSYC 4001 [0.5 credit]**Special Topics in Psychology**

Each section of PSYC 4001 deals with a different topic. Topics change yearly. Students may register in more than one section of PSYC 4001 but can register in each section only once. Prerequisite(s): each section will have its own. Lectures or seminars three hours a week.

PSYC 4003 [0.5 credit]**Origins of Modern Psychology**

An overview of the evolution of psychology, with an emphasis on psychology as a specialized area of knowledge and practice in the late-nineteenth and twentieth centuries. Topics covered may include the history of a particular period, content area, or cultural context. Precludes additional credit for PSYC 2003. Prerequisite(s): third or fourth-year standing in a Psychology Honours program. Lectures or seminars three hours per week.

PSYC 4100 [0.5 credit]**Advanced Topics in Social Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in Social psychology. The specific content for this course will vary from year to year. Prerequisite(s): fourth-year standing and PSYC 2100. Lectures or seminars three hours a week.

PSYC 4235 [0.5 credit]**Psychology of Climate Change**

An examination of the role that psychological research plays in understanding people's feelings, thoughts, and behaviour in relation to climate change and its associated problems. Strategies and interventions that help people cope with climate change and promote eco-friendly behaviour will also be discussed. Prerequisite(s): third or fourth-year standing and one PSYC at the 2000-level. Lectures or seminars three hours a week.

PSYC 4301 [0.5 credit]**Advanced Topics in Health Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in health psychology. The specific content for this course will vary from year to year. Prerequisite(s): fourth-year standing and PSYC 2301. Lectures or seminars three hours a week.

PSYC 4330 [1.0 credit]**Community Mental Health and Well-Being**

An examination of theory, research, and the practice of approaches to support peers and their well-being. Students will apply the concepts learned during the seminars in field placements. Includes: Experiential Learning Activity Prerequisite(s): fourth-year Honours standing in Psychology, Mental Health and Well-Being Stream. Seminar three hours per week.

PSYC 4333 [0.5 credit]**Clinical Psychology: Assessment and Intervention**

An advanced seminar on clinical psychology and mental health. Students will learn about frequently used treatment modalities and common factors across treatments.

Research methodology and recent advances dealing with a variety of common mental disorders will also be reviewed and discussed.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year Honours standing in Psychology and PSYC 3604.

Lecture or seminar three hours per week.

PSYC 4335 [0.5 credit]**Mental Health and Climate Change**

Climate change is a major global health threat that is related to mental health through changes to people's environment, physical security, and socioeconomic structures. Research focusing on the relationship between climate change and individuals' well-being will be discussed.

Prerequisite(s): third- or fourth-year standing and PSYC 2301.

Lectures or seminars three hours a week.

PSYC 4400 [0.5 credit]**Advanced Topics in Forensic Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in Forensic psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2400.

Lectures or seminars three hours a week.

PSYC 4403 [0.5 credit]**Female Offenders**

Feminist and social learning approaches to the assessment and treatment of female offenders. Theories and research relevant to selected patterns of law breaking and selected female offender types.

Prerequisite(s): third- or fourth-year standing and PSYC 3402.

Lectures or seminars three hours a week.

PSYC 4404 [0.5 credit]**Sex Offenders**

Theory and research concerning the etiology and maintenance of sexual offending; assessment, treatment, and management of sex offenders. Introduction to fundamental issues and controversies in the area.

Prerequisite(s): third- or fourth-year standing, PSYC 2400, and PSYC 3402.

Lectures or seminars three hours a week.

PSYC 4410 [0.5 credit]**Children and the Law**

This course will explore psychological factors affecting child witnesses and victims as they interact within the criminal justice system. The course will survey the intersection of psychology and law within the areas of eyewitness memory, police procedures, and the criminal justice system.

Prerequisite(s): fourth-year standing, and PSYC 2400 or PSYC 2500.

Lectures or seminars three hours a week.

PSYC 4500 [0.5 credit]**Advanced Topics in Developmental Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in developmental psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing, and one of PSYC 3500, PSYC 3505, PSYC 3506, PSYC 3507.

Lectures or seminars three hours a week.

PSYC 4600 [0.5 credit]**Advanced Topics in Personality Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in personality psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2600.

Lectures or seminars three hours a week.

PSYC 4700 [0.5 credit]**Advanced Topics in Cognitive Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in cognitive psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing, and PSYC 2700.

Lectures or seminars three hours a week.

PSYC 4801 [0.5 credit]**Occupational Health Psychology**

The application of psychological knowledge to enhance employee physical and mental health, safety and well-being, and more broadly, to enrich organizational life. Students will be able to learn and analyze critically the relevant methodological, theoretical, and empirical Occupational Health Psychology literature.

Prerequisite(s): third or fourth-year standing and one of PSYC 2100, PSYC 2301, PSYC 2801.

Lectures or seminars three hours a week.

PSYC 4802 [0.5 credit]**Advanced Topics in Organizational Psychology**

In-depth exploration of theoretical and empirical issues related to selected topics in organizational psychology. The specific content for this course will vary from year to year.

Prerequisite(s): fourth-year standing and PSYC 2801.

Lectures or seminars three hours a week.

PSYC 4900 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest. Normally, students may not include more than one credit of independent study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department.

Mentored work.

PSYC 4902 [0.5 credit]**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest. Normally, students may not include more than one credit of independent study in their total program.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in Psychology and permission of the Department.

Mentored work.

PSYC 4907 [1.0 credit]**Thesis for B.Sc. with Honours in Psychology**

A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4906 (no longer offered).

Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700 or PSYC 3805; and permission of the Department.

Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.

PSYC 4908 [1.0 credit]**Thesis for B.A. with Honours in Psychology**

A thesis supervised by a Faculty Adviser. Students review the appropriate literature, contribute to the design of a study or experiment, conduct data analyses, and produce an APA style written report. Students may also present a research poster at the Psychology Undergraduate Research Event.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4905 (no longer offered).

Prerequisite(s): fourth-year Honours standing in Psychology with a major CGPA of 10.0, PSYC 3000; one of PSYC 3100, PSYC 3300, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700, PSYC 3805; and permission of the Department.

Lectures during the fall term given by the course instructor and mentored work arranged by the Faculty Adviser.

PSYC 4909 [1.0 credit]**Project for B.Sc. with Honours in Psychology**

Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4906 (no longer offered), PSYC 4907, and PSYC 4908.

Prerequisite(s): fourth-year standing in B.Sc. (Honours) in Psychology, and PSYC 3000.

Seminars three hours a week.

PSYC 4910 [1.0 credit]**Project for B.A. with Honours in Psychology**

Within an active learning environment, students develop oral presentations and written documents that may include annotated bibliographies, essays, and presentation slides. They must also present a research poster at the Psychology Undergraduate Research Event. Students select an area of psychological research of interest to them.

Includes: Experiential Learning Activity

Precludes additional credit for PSYC 4905 (no longer offered), PSYC 4907 and PSYC 4908.

Prerequisite(s): fourth-year standing in B.A (Honours) in Psychology, and PSYC 3000.

Seminars three hours a week.

Public Administration (PADM)

Public Administration (PADM) Courses**PADM 1501 [0.5 credit]****Public Administration in Nunavut**

An introduction to the theoretical, constitutional and practical basis of public administration in Nunavut.

Normally offered in Nunavut.

Prerequisite(s): enrolment in the Certificate for Nunavut Public Service Studies.

PADM 1502 [0.5 credit]**Management of Federal-Territorial Relations**

Introduction to managing the relationship between the territorial and federal governments, with examples drawn from Nunavut, the Northwest Territories and Yukon practices. Normally offered in Nunavut.

Prerequisite(s): enrolment in the Certificate for Nunavut Public Service Studies and successful completion of PSCI 1002 and PADM 1501.

PADM 3105 [0.5 credit]**Management in the Public Sector**

Consideration of constraints and opportunities of public-sector management, including government at all levels and para-statal organizations. Topics may include the accountability regimes, features of the human resource management context, administration of information and material resources, responsibilities and relationships of managers towards citizens.

Prerequisite(s): third-year standing in the B.P.A.P.M. program.

Seminar three hours a week.

PADM 4213 [0.5 credit]**Gender and Public Policy**

Policy and policy-making as they pertain to gender relations within the state and in society. The negative and positive effects of public policy on gender relations in the family and the labour market.

Precludes additional credit for PADM 4701, PADM 5701.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5213, for which additional credit is precluded.

PADM 4214 [0.5 credit]**Budgetary Policy in the Public Sector**

Selected aspects of the expenditure and revenue budget and budgetary process at all levels of government. Critical review of actual budgets and budgetary processes.

Precludes additional credit for PADM 5103.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5214, for which additional credit is precluded.

PADM 4220 [0.5 credit]**Regulation and Public Policy**

Political, economic, legal, and organizational theories of regulation in the Canadian and comparative context. Processes and consequences of regulatory practice in selected Canadian public policy fields.

Precludes additional credit for PADM 5002.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5220, for which additional credit is precluded.

PADM 4221 [0.5 credit]**Health Policy in Canada**

Canadian health policies and programs set in a comparative political-economic and institutional context.

Precludes additional credit for PADM 4009, PADM 5009.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5221, for which additional credit is precluded.

PADM 4224 [0.5 credit]**Aboriginal Policy**

Canadian policies and programs on aboriginal peoples and aboriginal peoples' own policies as nations set in a comparative political-economic and institutional context.

Precludes additional credit for PADM 4806, PADM 5806.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5224, for which additional credit is precluded.

PADM 4225 [0.5 credit]**Trade Policy**

Canadian multilateral and regional trade policies and programs set in a comparative political-economic and institutional context.

Precludes additional credit for PADM 4807, PADM 5807.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5225, for which additional credit is precluded.

PADM 4226 [0.5 credit]**Tax Policy**

Canadian tax policies set in a comparative political-economic and institutional context.

Precludes additional credit for PADM 4509, PADM 5509.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5226, for which additional credit is precluded.

PADM 4227 [0.5 credit]**Education Policy**

Canadian policies and programs in education set in a comparative political-economic and institutional context. Precludes additional credit for PADM 4809, PADM 5809. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5227, for which additional credit is precluded.

PADM 4228 [0.5 credit]**Social Policy**

The nature and historical development of social programs in capitalist countries, with particular focus on Canada. The course will concentrate on developing a critical understanding of the social forces shaping these programs.

Precludes additional credit for PADM 4604, PADM 5604. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5228, for which additional credit is precluded.

PADM 4230 [0.5 credit]**Ethics for Public Policy**

The development and application of ethical theories to examine not simply what governments could do, but what they should do on the basis of consequences, principles, or motivations. Applications could include policies affecting climate change, inequality, end of life, privacy, use of force.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5230, for which additional credit is precluded.

Seminar three hours a week.

PADM 4320 [0.5 credit]**Ethics for Public Policy**

Development and application of ethical theories to examine what governments should do, taking into account the outcomes, principles, or motivations of public policies and policy-making. Applications could include policies affecting climate change, income inequality, end of life, privacy, restitution, use of force.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5230, for which additional credit is precluded.

PADM 4611 [0.5 credit]**Science and Technology Policies**

Theory and practice regarding governmental policies for science and technology, and the use of scientific knowledge in the policy and regulatory processes of government. Concerns regarding the ethical issues and the transparency of science in government. Precludes additional credit for PADM 5400.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5611, for which additional credit is precluded.

PADM 4612 [0.5 credit]**Industrial Policy, Innovation and Sustainable Production**

An examination of sustainable production theory and key drivers, barriers and opportunities influencing innovation in industrial systems and processes. The relationship of public policies and industry practices are explored in a number of sectors.

Precludes additional credit for PADM 4600, PADM 5600. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5612, for which additional credit is precluded.

PADM 4615 [0.5 credit]**Politics and Policy of Energy in Canada**

The dilemmas associated with energy policy in Canada. Economic, social and environmental dimensions of energy decision making; Canadian issues within the contexts of a changing international scene and long term energy transitions.

Precludes additional credit for PADM 5515. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5615, for which additional credit is precluded.

PADM 4616 [0.5 credit]**Environmental Policy**

Canadian environmental policies and programs in a comparative political-economic and institutional context. Precludes additional credit for PADM 4008, PADM 5008. Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as PADM 5616, for which additional credit is precluded.

PADM 4817 [0.5 credit]**Health Policy in Developing Countries**

Debates regarding health policy in the developing world, in the context of the global health sector reform movement, trade and intellectual property regimes, and strategies of corporate and NGO actors. Issues of gender, class and the determinants of health.

Prerequisite(s): fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program.

Also offered at the graduate level, with different requirements, as IDMG 5617/PADM 5817, for which additional credit is precluded.

Public Affairs and Policy Management (PAPM)

Public Affairs and Policy Management (PAPM) Courses

PAPM 1001 [0.5 credit]**Policy: Analysis, Implementation, and Evaluation**

The processes of policy-making, implementation and evaluation. Forces that shape policy deliberations and alternative tools for managing policy action and policy evaluation. Theoretical approaches to understanding the origins of policy, and methods by which programs are designed and assessed.

Includes: Experiential Learning Activity

Precludes additional credit for PAPM 2000.

Lecture two hours a week, discussion one hour per week.

PAPM 2001 [0.5 credit]**Foundations of Public Policy: Political Thought**

Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in political philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.

Precludes additional credit for PAPM 1000.

Prerequisite(s): PAPM 1001, PSCI 2003, and second-year standing.

Lecture two hours a week, discussion one hour a week.

PAPM 2002 [0.5 credit]**Foundations of Public Policy: Economic Thought**

Theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in economic philosophy and theory, students consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs, public interest.

Precludes additional credit for PAPM 1000.

Prerequisite(s): PAPM 1001, PSCI 2003, and second-year standing.

Lecture two hours a week, discussion one hour a week.

PAPM 3000 [0.5 credit]**Policy Research**

An examination of the research strategies and techniques relevant to policy analysis and evaluation. Using the case study method, the role of research and research organizations in the policy process is discussed. The issue of ethical dilemmas in policy research is also considered.

Includes: Experiential Learning Activity

Prerequisite(s): PSCI 2701 and PSCI 2702, or COMM 2001, or ECON 2201 and ECON 2202 and Good Standing in the Bachelor of Public Affairs and Policy Management program.

Lecture and discussion three hours a week.

PAPM 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

PAPM 4000 [0.5 credit]**Capstone Seminar in Public Affairs and Policy Management**

Policy workshop focusing on the application of public affairs analysis to develop problem solving and research skills. Seminar is policy-focused and organized by area of Specialization in the program. Students, working in small groups, examine concrete policy problems, actual or simulated, in specific institutional contexts.

Includes: Experiential Learning Activity

Prerequisite(s): PAPM 3000 and Good Standing in the Bachelor of Public Affairs and Policy Management program.

Seminar three hours a week.

PAPM 4099 [0.5 credit]**Policy Seminar**

Students address a specific policy problem or problems, in interaction with local, national or international policy experts or practitioners. Emphasis on policy analysis, research, and communication skills.

Includes: Experiential Learning Activity

Prerequisite(s): PAPM 3000.

Seminar three hours per week.

PAPM 4100 [0.5 credit]**Special Topics in Public Affairs and Policy Management**

Analysis of selected issues in public affairs and policy management not ordinarily treated in the regular course program. The choice of topics will vary from year to year. Students should consult with the College regarding the topic offered.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the B.P.A.P.M. program or permission of the Kroeger College.

Seminar three hours per week.

PAPM 4908 [1.0 credit]**Honours Research Essay**

Individual research project resulting in a major essay, completed under the supervision of a faculty member and evaluated by both the supervisor and an appointed reader. Students are responsible for locating a faculty member willing to supervise the essay. Departmental regulations apply.

Includes: Experiential Learning Activity

Prerequisite(s): PAPM 3000 and fourth-year standing in the Bachelor of Public Affairs and Policy Management program with a Major CGPA or 9.0 or better, or permission of the Director of the Public Affairs and Policy Management program.

Religion (RELI)

Religion (RELI) Courses

Language courses RELI 1010 [1.0] Elementary Language Tutorial, RELI 2010 [1.0] Intermediate Language Tutorial and RELI 3010 [1.0] Advanced Language Tutorial are intended for students specializing in a particular religious tradition. They are offered according to the availability of members of the Discipline. Courses taken at the 2000-level or above will be mainly independent study under the supervision of a member of the Discipline. Students interested in taking these courses should consult the Coordinator.

RELI 1010 [1.0 credit]**Elementary Language Tutorial**

Elementary study of the language required for studying a religious tradition.

Precludes additional credit for RELI 1902 (no longer offered).

Prerequisite(s): Major/Minor in Religion or permission of the department.

Tutorial two hours a week.

RELI 1710 [0.5 credit]**Judaism, Christianity, Islam**

A survey of the history, beliefs and practices of these major religious traditions.

Includes: Experiential Learning Activity

Precludes additional credit for RELI 1000.

Lecture three hours a week.

RELI 1712 [0.5 credit]**Religions of South and East Asia**

A survey of the history, beliefs, and practices of South and East Asian religious traditions, including Hinduism, Buddhism, Jainism, Sikhism, Daoism, Confucianism, and Shinto.

Precludes additional credit for RELI 1715, RELI 1716.

Lecture three hours per week.

RELI 1731 [0.5 credit]**Varieties of Religious Experience**

The variety of religious experiences and their interpretations: myth, literature, art and religious doctrine. Topics include time, self, the other, journey and wisdom. Examples ranging from shamanistic experience to the abstractions of Buddhist philosophy.

Precludes additional credit for RELI 1205, RELI 1206, RELI 1402, and RELI 2002.

Prerequisite(s): restricted to students registered in the Bachelor of Humanities & Religion program.

Lecture three hours a week.

RELI 1741 [0.5 credit]**Global Religions: Identity and Community**

An introduction to major issues in the study of religion in global contexts, drawing on historical and contemporary examples.

Lecture three hours a week.

RELI 2010 [1.0 credit]**Intermediate Language Tutorial**

Intermediate study of the language required for studying a religious tradition. Restricted to students registered in a Religion program.

Precludes additional credit for RELI 2902 (no longer offered).

Prerequisite(s): RELI 1902 or RELI 1010 or permission of the department.

Tutorial two hours a week.

RELI 2110 [0.5 credit]**Judaism**

The history of Judaism and the Jewish people from the Second Temple until the present day. The organization, basic beliefs, social and ethical practices of the Jews and Judaism.

Precludes additional credit for RELI 1008 and RELI 2508.

Lecture three hours a week.

RELI 2121 [0.5 credit]**Hebrew Bible**

Introduces the Hebrew Bible within historical and religious frameworks. All texts are in English.

Precludes additional credit for RELI 3505C taught in 2007-2008.

Prerequisite(s): RELI 1710 or RELI 1000 or RELI 2110 or RELI 2508 or permission of the department.

Lecture three hours a week.

RELI 2200 [0.5 credit]**Christianity**

An introduction to the history, beliefs, traditions, practices, and diversity of Christianity from its beginnings to the present day.

Lecture three hours per week.

RELI 2220 [0.5 credit]**Early Christianity**

Introduction to the critical study of the writings of the New Testament with discussion of their Hellenistic and Jewish background, the historical Jesus, Paul and his letters, and historical and sociological explanations for the rise of the early church and interpretation of its writings.

Precludes additional credit for RELI 1003, RELI 1200 and RELI 2207.

Lecture three hours a week.

RELI 2230 [0.5 credit]**Global Christianity**

Survey of recent and current Christian movements around the world, both by region and thematically, with emphasis on institutions and networks that connect Christian communities across national boundaries.

Special consideration is given to the cultural and political capacities of such Christian communities and networks.

Lecture three hours a week.

RELI 2310 [0.5 credit]**Islam**

The study of Muslim religious tradition and investigation of its organization, basic beliefs, social and ethical principles and practices.

Precludes additional credit for RELI 1009 and RELI 2509.

Lecture three hours a week.

RELI 2330 [0.5 credit]**The Qur'an**

An examination of the Qur'an's content, form, style, central themes, canonization, and classical and contemporary interpretive traditions.

Prerequisite(s): second-year standing.

Lecture three hours a week.

RELI 2350 [0.5 credit]**Classical Islamic Thought**

A survey of the development of the central ideas and schools of Islamic theology and philosophy from the eighth century to the end of the seventeenth century CE.

Precludes additional credit for RELI 3320 or RELI 3321.

Lecture three hours a week.

RELI 2355 [0.5 credit]**Islamic Ethics**

A survey of Muslim ethical writings on the pursuit of virtue and the good life, human nature, individual agency, and moral responsibility.

Lecture three hours per week.

RELI 2410 [0.5 credit]**Buddhism**

Basic beliefs and practices of the Buddhist tradition and a brief survey of its development and transformations in India, Sri Lanka, Southeast Asia, Tibet, China and Japan.

Precludes additional credit for RELI 1006 and RELI 2106.

Lecture three hours a week.

RELI 2510 [0.5 credit]**Hinduism**

Basic beliefs, practices, and social structures of the Hindu tradition as reflected in Hindu scriptures, myths and symbols, and philosophical schools.

Precludes additional credit for RELI 1005 and RELI 2005.

Lecture three hours a week.

RELI 2515 [0.5 credit]**Religion and Aesthetics in India**

Myths and symbols of the Indian tradition expressed in Hindu and Buddhist art. Hindu theories of beauty and the interface of the arts with the spiritual traditions of India.

Precludes additional credit for RELI 2005 (if taken before 2007-2008) and RELI 2008.

Prerequisite(s): second-year standing.

Lecture three hours a week.

RELI 2535 [0.5 credit]**Religion and Gender**

An exploration of women and religion in historical and contemporary contexts.

Lecture three hours a week.

RELI 2600 [0.5 credit]**Religions of China**

Survey of the origins, development, and diffusion of Chinese religious traditions, including Confucianism, Daoism, Chinese Buddhism and popular religion(s).

Includes: Experiential Learning Activity

Lecture three hours a week.

RELI 2710 [1.0 credit]**Maccabees to Muhammad**

The early history, literature and ideas of Judaism, Christianity and Islam from 200 BCE to 750 CE.

Precludes additional credit for RELI 2208.

Prerequisite(s): restricted to students in the Bachelor of Humanities & Religion program.

Lecture three hours per week.

RELI 2711 [0.5 credit]**Love and Its Myths**

Major devotional movements in Hinduism and Christianity, focusing on the love of the divine and philosophical accounts of these ideas over time.

Lecture three hours a week.

RELI 2712 [0.5 credit]**Religious Diversity of Canada**

An historical survey emphasizing the interactions of various religious traditions in Canada, including indigenous religions, Christian missionary and colonial traditions, immigrant and global diaspora religions.

Precludes additional credit for RELI 2307 Section A (2007-2008).

Lectures three hours a week.

RELI 2713 [0.5 credit]**Mystical and Contemplative Traditions**

An historical and functional study of mystical experiences in their religious contexts, relying on examples from selected traditions such as the Christian, Buddhist, Hindu, Jewish and Muslim.

Precludes additional credit for RELI 2300.

Lecture three hours a week.

RELI 2720 [0.5 credit]**Indigenous Religions of Canada**

Religions of Inuit, First Nations and Métis peoples, past and present. Considerations include concepts of tradition, syncretism and “creative ritual.” Primary sources may include textual, visual and oral materials. Course may include fieldwork, as well as in-class presentations by community elders.

Lecture three hours a week.

RELI 2732 [0.5 credit]**Death and Afterlife**

The meaning of death and afterlife in some religious traditions and secular philosophies with emphasis on the Hindu teaching of the immortal soul; the Hebraic idea of collective survival; the Christian doctrine of resurrection of the body; the Buddhist conception of no-soul and nirvana.

Precludes additional credit for RELI 2308.

Lecture three hours a week.

RELI 2735 [0.5 credit]**Greek Religion**

A study of religion in ancient Greece.

Also listed as CLCV 2103.

Precludes additional credit for CLCV 2102, RELI 2734, RELI 2102.

Lecture three hours a week.

RELI 2736 [0.5 credit]**Religion and Society**

Cross-cultural survey of religious institutions, focusing on theories and methodologies in the study of religion. Topics may include myth, totemism, cults, ritual, belief systems, altered states of consciousness, new religious and/or new age movements and the relationship of religion with other social institutions and processes.

Includes: Experiential Learning Activity

Also listed as ANTH 2550.

Lectures and workshop three hours a week.

RELI 2737 [0.5 credit]**Roman Religion**

A study of religion in ancient Rome.

Also listed as CLCV 2104.

Precludes additional credit for CLCV 2102 and RELI 2734 and RELI 2102.

Lecture three hours a week.

RELI 2738 [0.5 credit]**Philosophy of Religion**

A study of philosophical issues arising from religion. Topics may include: arguments for and against the existence of God, religious experience, death and the afterlife, miracles, God and evil, the relationship between religion and science, and the relationship between religion and ethics.

Also listed as PHIL 2601.

Prerequisite(s): a course in philosophy or second-year standing.

Lecture three hours a week.

RELI 2741 [0.5 credit]**Big Questions in Religious Studies**

In this Inquiry course, students will be introduced to a specific topic in Religious Studies (e.g., ritual, narrative, space) and develop a research project related to it. Focus on fostering intellectual curiosity and developing practical skills of reading, writing and research fundamentals.

Precludes additional credit for RELI 2002 (no longer offered), RELI 1205 (no longer offered), RELI 1402 (no longer offered), and RELI 1730 (no longer offered).

Seminar three hours per week.

RELI 2750 [0.5 credit]**Sikhism**

An examination of the basic beliefs, practices, and social structures of the Sikh tradition as reflected in Sikh scriptures, history and philosophical schools.

Lecture three hours a week

RELI 2800 [0.5 credit]**Indigenous Traditions**

This course illuminates a recent category of “World Religions” by examining cases from all five continents, as well as in diaspora (e.g., Brazilian Candomblé, Roma/Sinti religion). Considerations include the study of minority religions, religion in oral cultures, myth & ritual studies, colonialism, globalization.

Precludes additional credit for RELI 1720 (no longer offered).

Lecture three hours per week.

RELI 2810 [0.5 credit]**Special Topics in Religion and Popular Culture**

Examination of interactions between religion and popular culture in the form of music, film, video games, literature, and other media. Topic and focus will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.

Includes: Experiential Learning Activity

Lecture three hours per week.

RELI 2811 [0.5 credit]**Religions and the Environment**

Attitudes in the major world religions to nature and the environment and recent responses by religious traditions to ecological degradation and crisis. Includes examination of religious sensibilities expressed in environmentalism.

Precludes additional credit for RELI 3710.

Lecture three hours per week.

RELI 2840 [0.5 credit]**Topics in Religion**

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Precludes additional credit for repeated topics.

Lecture three hours a week.

RELI 3000 [0.5 credit]**Religion and Public Life**

This course examines some aspects of the intersection between religion(s) and public life, broadly construed, including social, economic, political, institutional aspects, either in the contemporary world or focused on a particular historical period.

Seminar three hours per week.

RELI 3010 [1.0 credit]**Advanced Language Tutorial**

Advanced study of the language required for studying a religious tradition.

Precludes additional credit for RELI 3902 (no longer offered).

Prerequisite(s): RELI 2902 (no longer offered) or RELI 2010 or permission of the department.

Tutorial two hours a week.

RELI 3101 [0.5 credit]**Special Topics in Religions and the Body**

Discussion of the embodiment of religious ideas in life, law, and practice, for example in food consumption, gender ideologies, sexuality, adornment, and death rituals. Topic will vary year to year; please check departmental website for information. May be repeated for credit when the topic changes.

Precludes additional credit for RELI 3130 (no longer offered), RELI 3131 (no longer offered), RELI 3331 (no longer offered), RELI 3734 (no longer offered).

Lecture three hours a week.

RELI 3140 [0.5 credit]**The Holocaust: Historical and Religious Dimensions**

Introduction to the historical and religious dimensions of the Holocaust. The foundations, perpetration and consequences of the Nazi Final Solution through primary sources including survivor testimony will be examined.

Also listed as HIST 3714.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

RELI 3220 [0.5 credit]**Reformation Europe**

A history of the Protestant and Catholic Reformations of the sixteenth century, with emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era.

Also listed as HIST 3708.

Precludes additional credit for RELI 3708 (no longer offered).

Prerequisite(s): 0.5 credit at the 2000-level in HIST or third-year standing.

Lecture three hours a week.

RELI 3225 [0.5 credit]**Christianity 300-1500**

This course examines the development of Christian practices and teachings from late antiquity to early modernity, with a special emphasis on their historical diversity and the complex dynamics of church formation. Students should expect to read (in English) both primary and secondary sources.

Precludes additional credit for RELI 2210 (no longer offered), RELI 2225 (no longer offered).

Lecture three hours a week.

RELI 3226 [0.5 credit]**Christianity 1500-1900**

Developments in Christian practices and teachings over the early modern and modern periods, especially in relation to social changes commonly associated with modernity including: urbanization, state formation, industrialization, colonization, the development of capitalist economies.

Precludes additional credit for RELI 2210 (no longer offered), RELI 2226 (no longer offered).

Lecture three hours a week.

RELI 3230 [0.5 credit]**Jesus of Nazareth**

A study of the historical records of the life of Jesus, the methods used to interpret them, and the resulting images of Jesus.

Precludes additional credit for RELI 2205, RELI 3208 and RELI 3105.

Prerequisite(s): RELI 2207 or RELI 2220 or permission of the department.

Lectures three hours a week.

RELI 3231 [0.5 credit]**Paul of Tarsus**

The social, religious, and historical context of Paul, the communities he founded, and the letters he wrote to them.

Precludes additional credit for RELI 3300 and RELI 3106.

Prerequisite(s): RELI 2207 or RELI 2220 or permission of the department.

Lecture three hours a week.

RELI 3232 [0.5 credit]**Christian Discipline**

An historical survey of key Christian thought and practices at the individual and collective level. Topics may include self-discipline, body discipline, monastic discipline, church discipline and social discipline.

Precludes additional credit for RELI 3302 Section "A" taught in 2007-2008.

Prerequisite(s): third-year standing or permission of the department.

RELI 3250 [0.5 credit]**Evangelical Christianity in Social-Historical Perspective**

The development of some protestant Christianities in relation to material factors, such as colonialism, industrial or consumer capitalism, imperialism, and in relation to major ideological trends, such as nationalism, economic or political liberalism and atheism.

Lecture three hours a week.

RELI 3301 [0.5 credit]**Music and Religion**

An examination of the integral role music plays in religion and sacred ritual in different world cultures and religions. Through various case studies, the course broadly considers how sacred soundscapes shape people's worldviews, identities, and experiences within and outside of their communities.

Also listed as MUSI 3301.

Prerequisite(s): second-year standing.

Seminars three hours a week.

RELI 3330 [0.5 credit]**Sufism**

An introduction to the main practical and theoretical dimensions of Islam's mystical tradition as seen through the life and work of its key representatives.

Prerequisite(s): RELI 2710 or RELI 2713 or permission of the department.

Lecture three hours a week.

RELI 3340 [0.5 credit]**The Life and Image of Muhammad**

Overview of the life and teaching of the Prophet Muhammad, and the most salient motifs and features of Muslim devotion to him.

Precludes additional credit for RELI 2340.

Prerequisite(s): RELI 1710 or RELI 2310 or permission of the department.

Lecture three hours a week.

RELI 3360 [0.5 credit]**Special Topics in Islamic Texts & Narratives**

A focus on post-Qur'anic Islamic literature and interpretive traditions (e.g. tafsir, hadith); texts and topics will vary from year to year; please check departmental website for information. May be repeated for credit when the topic changes.

Prerequisite(s): RELI 2310 or RELI 2330.

Lecture three hours per week.

RELI 3420 [0.5 credit]**Early Buddhism**

The development of early Buddhist philosophy, psychology and practice with emphasis on the Pali Canon and its commentators.

Precludes additional credit for RELI 3215.

Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.

Lecture three hours a week.

RELI 3422 [0.5 credit]**Buddhism Beyond India**

The rise of the Mahayana and the dissemination and development of Buddhist thought and practice outside of India.

Precludes additional credit for RELI 3217.

Prerequisite(s): RELI 2106 or RELI 2410 or permission of the department.

Lecture three hours a week.

RELI 3520 [0.5 credit]**Early Hinduism**

A historical survey of Hinduism from the Vedic era to the development of devotional Hinduism. Vedic religion and developments in early Hindu Philosophy and sectarian Hinduism.

Precludes additional credit for RELI 3015.

Lecture three hours a week.

RELI 3522 [0.5 credit]**Modern Hinduism**

A survey of major developments in Hinduism since the period of colonial British rule. The development of "reform" Hinduism in the 18th and 19th centuries, and the emergence of Hindu nationalist movements in the 20th century.

Precludes additional credit for RELI 3007.

Lecture three hours a week.

RELI 3722 [0.5 credit]**Religion and Violence**

A thematic course that examines putative cases of "religion and violence" from a range of world traditions, but also interrogates aspects of the "religion and violence" rubric itself.

Prerequisite(s): third-year standing or permission of the department.

Lecture three hours a week.

RELI 3732 [0.5 credit]**Studies in Greek Art**

A study of period or theme in the art and archaeology of Ancient Greece. Topics may vary from year to year.

Also listed as ARTH 3102, CLCV 3306.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

RELI 3733 [0.5 credit]**Studies in Roman Art**

A study of a period or theme in the art and archaeology of the ancient Romans. Topics may vary from year to year. Also listed as ARTH 3105, CLCV 3307.

Prerequisite(s): second-year standing or permission of the unit. Permission of the unit required to repeat.

Lecture three hours a week.

RELI 3741 [0.5 credit]**Classical Approaches to Religion**

Examination of reflection on the nature and origin of religion from the ancient world up to key figures and founders of the discipline of the systematic, critical, and scientific study of religion in the nineteenth and early twentieth century.

Prerequisite(s): second-year standing.

Lecture three hours per week.

RELI 3840 [0.5 credit]**Topics in Religion**

Content of this course may vary from year to year. Please check departmental website for information on the topic.

Precludes additional credit for repeated topics.

Lecture three hours a week.

RELI 3850 [0.5 credit]**Topics in the Study of Religion Abroad**

This travel course explores religion in its historical and/or contemporary contexts in a particular geographic locale.

Travel destinations, religious traditions studied, course content, and themes vary from year to year.

Prerequisite(s): third year standing and 1.0 credit of study in the area related to the year's topic religion, and permission of the department. Permission of the department is required to repeat this course.

Hours to be arranged. Costs associated with the course are borne by the student.

RELI 4602 [0.5 credit]**Is Religious Freedom a Human Right?**

Legal, theoretical, and theological interconnections between religion and human rights. Evaluation of concepts including religious freedom, secularism, public sphere, accommodation and neutrality. Examination of religion and culture, interdependence of legal and religious perspectives, boundaries of religion and state, and religious compulsion. Use of case studies.

Also listed as HUMR 4602, RELI 4602.

Prerequisite(s): LAWS 2908, LAWS 3602, and fourth-year Honours standing.

Seminar

RELI 4741 [0.5 credit]**Contemporary Issues in the Study of Religion**

This course engages with the real world implications of late twentieth and twenty-first century scholarship on religion with a focus on applied learning and developing employable skills that facilitate transition from academia to a career.

Includes: Experiential Learning Activity

Precludes additional credit for RELI 3301, RELI 4301, RELI 4740 (no longer offered).

Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.

Seminar three hours per week.

RELI 4840 [0.5 credit]**Tutorial**

A tutorial on a topic in religious studies. Contents of the tutorial to be arranged with the supervising faculty member.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.

RELI 4850 [0.5 credit]**Seminar in the Study of Religion**

Content of this course may vary from year to year. Please consult the departmental website for information on the topic.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Honours B.A. Religion program, or permission of the department.

Also offered at the graduate level, with different requirements, as RELI 5850, for which additional credit is precluded.

Seminar three hours a week.

RELI 4990 [1.0 credit]**Honours Research Essay**

Honours research paper (approx. 40 pages) is due on the last day of winter term classes. Written proposal due to the Proposal Board on the first day of fall term classes. Please consult department document for full requirements and information.

Includes: Experiential Learning Activity

Precludes additional credit for RELI 4908 and RELI 4909.

Prerequisite(s): 10.0 CGPA and fourth-year standing in the Honours B.A. Religion program, or permission of the department.

Russian (RUSS)

Russian (RUSS) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered

following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

RUSS 1010 [0.5 credit]

First-Year Russian I

For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for RUSS 1110. Four hours a week.

RUSS 1020 [0.5 credit]

First-Year Russian II

Continuation of first-year Russian. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for RUSS 1110. Prerequisite(s): grade of C or higher in RUSS 1010, or permission of the School. Four hours a week.

RUSS 1110 [1.0 credit]

Intensive First-Year Russian

For students with no knowledge of Russian. Oral skills, reading and writing. Compulsory attendance. Precludes additional credit for RUSS 1010 and RUSS 1020. Eight hours a week (one term).

RUSS 2010 [0.5 credit]

Second-Year Russian I

Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 1020 or RUSS 1110, or permission of the School. Four hours a week.

RUSS 2020 [0.5 credit]

Second-Year Russian II

Continuation of second-year Russian. Further study of Russian to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 2010, or permission of the School. Four hours a week.

RUSS 3010 [0.5 credit]

Third-Year Russian I

Further study of Russian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 2020, or permission of the School. Three hours a week.

RUSS 3015 [0.5 credit]

Russian for Heritage Speakers I

For students who have attained Russian language proficiency in informal settings or who completed elementary school in a Russian speaking country. The course builds literacy skills, formalizes grammar awareness, and develops writing and reading language skills in a formal academic setting. Precludes additional credit for all 1000 through 3000 level Russian courses. Prerequisite(s): Permission of the School. Online.

RUSS 3020 [0.5 credit]

Third-Year Russian II

Continuation of third-year Russian. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 3010, or permission of the School. Three hours a week.

RUSS 3025 [0.5 credit]

Russian for Heritage Speakers II

Further study of Russian to enhance students' literacy skills and formalize grammar awareness in a formal academic setting. Emphasis on the use of formal and academic language in oral and written form; further development of writing and reading skills. Precludes additional credit for all 1000 through 3000 level Russian courses. Prerequisite(s): RUSS 3015 or permission of the School. Online.

RUSS 4010 [0.5 credit]

Fourth-Year Russian I

Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 3020, or permission of the School. Three hours a week.

RUSS 4020 [0.5 credit]

Fourth-Year Russian II

Continuation of fourth-year Russian. Advanced spoken and written Russian with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance. Prerequisite(s): grade of C or higher in RUSS 4010, or permission of the School. Three hours a week.

RUSS 4115 [0.5 credit]**Russian for Social Studies**

Russian language skills for translation of modern history and social science texts from Russian into English, with an emphasis on syntax. Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for Russian translation offered under EURR 4901.

Prerequisite(s): permission of the School. Not open to students with native-like Russian proficiency.

Three hours a week.

RUSS 4120 [0.5 credit]**Russian for Research**

Russian language skills for conducting research in modern history and social sciences, with an emphasis on practice and theory of translation from Russian into English.

Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for Russian translation offered under EURR 4902.

Prerequisite(s): grade of C in RUSS 4115, or permission of the School. Not open to students with native-like Russian proficiency.

Three hours a week.

RUSS 4900 [1.0 credit]**Independent Study**

Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020 or equivalent, or permission of the School.

RUSS 4901 [0.5 credit]**Independent Study**

Research in a topic in Russian language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing and enrolment in the Minor in Russian, grade of C or higher in RUSS 3020, or equivalent, or permission of the School.

Sexuality Studies (SXST)

Sexuality Studies (SXST) Courses**SXST 2101 [0.5 credit]****Sexuality Studies: A Critical Introduction**

While sexuality is often considered the most private and 'natural' of personal concerns, it is saturated with issues of social power, historical change, and public politics. This course offers a critical introduction to interdisciplinary studies of sexuality, focusing on history, theory, and cultural practice.

Includes: Experiential Learning Activity

Precludes additional credit for DIST 2101 (no longer offered).

Prerequisite(s): second-year standing or permission of the Institute.

Lectures and discussion groups three hours a week.

SXST 2102 [0.5 credit]**Sexuality, Gender, and Security**

Historical and contemporary analysis of surveillance, security, and regulation of sexuality, race, class, and gender. Students will critically examine how 'subversives' were created through discourse and administrative logics such as policy and law.

Includes: Experiential Learning Activity

Also listed as HUMR 2102.

Prerequisite(s): second year standing.

Lectures and discussions three hours a week.

SXST 3103 [0.5 credit]**Sexuality and Disability**

Exploration of ways that embodied categories of sex and gender, as well as desire are mediated through mainstream and alternative discourses of disability. Topics may include: crip theory, mental health issues, and LGBTQ sexualities.

Prerequisite(s): third-year standing or permission of the Institute.

Lecture three hours a week.

SXST 3104 [0.5 credit]**Transnational Sexualities**

Students analyze sex, gender and sexuality as power relations within, and between nation-states comprising the Global North and South, as well as new knowledge created through national border crossings. Topics may include: Orientalism, colonialization, and diasporic identities.

Prerequisite(s): third-year standing and SXST 2101.

Lecture three hours a week.

SXST 3106 [0.5 credit]**Queer(ing) Archives**

Examination of the archival turn in historical and theoretical perspective with an emphasis on sexuality, race, and gender as subjectivities in queer, trans, and colonial archives.

Also listed as HIST 3102.

Prerequisite(s): third-year standing.

Seminar three hours a week.

SXST 3812 [0.5 credit]**Interdisciplinary Topics in Sexuality Studies**

An interdisciplinary analysis of one or more topics in sexuality studies. The topics of this course will vary year to year and are announced in advance of registration.

Includes: Experiential Learning Activity

Prerequisite(s): Third year standing and SXST 2102

OR permission of the Institute of Women's and Gender Studies.

Lecture three hours per week. This course is repeatable as long as each topic is different.

SXST 4101 [0.5 credit]**Interdisciplinary Studies of Sexuality**

A study of selected issues in sexuality studies considered from an interdisciplinary perspective. The course may focus on any one, or combination of, sexuality studies in relation to history, theory, and/or cultural practice.

Includes: Experiential Learning Activity

Precludes additional credit for DIST 4101 (no longer offered).

Prerequisite(s): SXST 2101 and fourth-year standing.

Seminar three hours a week.

SXST 4102 [0.5 credit]**Queer Theory**

A critical approach to gender and sexuality by engaging in key debates and texts in the field of queer theory and studies.

Prerequisite(s): SXST 2101 and fourth-year standing.

Also offered at the graduate level, with different requirements, as WGST 5102, for which additional credit is precluded.

Seminar three hours a week.

SXST 4103 [0.5 credit]**Politics of Kink**

This seminar analyzes critically the existence and regulation of non-normative sexual attitudes, behaviours and practices. Topics may include: non-monogamy, sadomasochism, pornography.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SXST 4104 [0.5 credit]**Sexuality and Political Economy**

An interdisciplinary and intersectional approach to issues in the area of Sexuality Studies focusing on socio-economic relations (e.g. class location, consumption) and the ways they mediate sex, gender, and sexual subject formation and governance. SXST 4101.

Includes: Experiential Learning Activity

Prerequisite(s): fourth year standing.

Seminar three hours a week.

SXST 4105 [0.5 credit]**Queer Ecologies**

Students engage with debates within sexuality studies and transgender studies regarding the interwoven relationships between gender, race, indigeneity, desire, bodies and ecological politics. Topics may include: climate change, gendered and sexualized landscapes, and speciesism.

Prerequisite(s): fourth-year standing or by permission of the department.

Seminar three hours a week.

SXST 4106 [0.5 credit]**Queer Aesthetics: Affect, Cultural Production, Sexuality**

Critical examination of affective economies made in and through LGBTQ cultural production. Drawing from feminist, queer, trans and queer of colour critique, students will consider how queer affect, sentiment and emotions uniquely circulate in art and aesthetic objects.

Prerequisite(s): fourth-year standing or permission of the Institute.

Seminar three hours a week.

Social Work (SOWK)

Social Work (SOWK) Courses**SOWK 1001 [0.5 credit]****Introduction to Social Welfare**

Explores definitions of social welfare and the structure of the Canadian welfare state; evolution and devolution of the welfare state in Canada; social welfare and its relationship to social work, social change, and social justice.

Precludes additional credit for SOWK 1000 (no longer offered).

Lecture three hours a week.

SOWK 1002 [0.5 credit]**Introduction to Social Work**

Introduction to the profession of social work; evolution of the social work profession in Canada; social work knowledge, values and skills. Explores professional and regulatory social work bodies and international linkages.

Precludes additional credit for SOWK 1000 (no longer offered).

Lectures three hours a week.

SOWK 2001 [0.5 credit]**Structural Analysis and Social Work**

Evolution of structural social work, theories and critiques of structural social work and contemporary issues and challenges.

Precludes additional credit for SOWK 2000 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.

Lecture three hours a week.

SOWK 2005 [0.5 credit]**Values and Ethics for Social Work**

Focuses on knowledge and skills for ethical decision-making in social work; understanding social work values and ethics, accountability and the professional use of self. Includes: Experiential Learning Activity
Precludes additional credit for SOWK 2000 (no longer offered).

Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.
Lecture three hours a week.

SOWK 2100 [0.5 credit]**The Political Economy of the Social Welfare State**

Political economic theories as lenses for structural analysis of social problems and policies affecting social work practice in Canada.

Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.
Lecture three hours a week.

SOWK 2202 [0.5 credit]**Introduction to Social Work Practice with Individuals and Families**

Understand and develop skills required for working with individuals and families; active listening; use of self; engagement; rapport-building; interviewing and interventions; empathy; interpersonal and professional collaboration; supervision.

Includes: Experiential Learning Activity
Precludes additional credit for SOWK 3201 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.
Lecture three hours a week.

SOWK 2203 [0.5 credit]**Introduction to Social Work Practice with Groups and Communities**

Introduces students to theory and practice skills for group work and community work; structural social work with groups and communities.

Precludes additional credit for SOWK 3200 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002. For Bachelor of Social Work students only.
Lecture three hours a week.

SOWK 2300 [0.5 credit]**Drugs in Society: Theory, Policy, Practice**

Examines extent and nature of alcohol, prescription and illicit drug use, theories of drug dependence, history of drug policy; contemporary drug strategies and treatment in Canada.

Precludes additional credit for SOWK 2003 (no longer offered).
Prerequisite(s): SOWK 1001 and SOWK 1002.
Lecture three hours a week.

SOWK 2301 [0.5 credit]**Working with Children and Youth**

Preventative and protective social work intervention with children and youth. Issues addressed include child neglect, abuse and violence in the context of family; organizational mandate and social political contexts. Programs and services for children and youth.

Precludes additional credit for SOWK 2201 (no longer offered).
Lecture three hours a week.

SOWK 3001 [0.5 credit]**Introduction to Research Methods in Social Work**

Research methods used in social work; research paradigms; quantitative and qualitative analysis in social work and social welfare; stages in conducting research. Precludes additional credit for SOWK 2501 (no longer offered) and SOWK 2500 (no longer offered).

Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3002 [0.5 credit]**Introduction to Statistical Analysis in Social Work**

Fundamentals of statistical analysis; descriptive and inferential statistics and their use in social work research. Statistical tests including Chi-Square, t-tests, correlations and simple linear regressions.

Precludes additional credit for SOWK 2500 (no longer offered), SOWK 2502 (no longer offered).
Prerequisite(s): third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3100 [0.5 credit]**Social Policy and Administration**

Understanding the welfare state and social policy in Canada; exploring issues in administration including program design and implementation; understanding and developing skills in policy-making and policy analysis. Canadian focus; recognition of the distinctiveness of social policy in Quebec.

Prerequisite(s): SOWK 2100 and third-year standing or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3206 [0.5 credit]**Community Development and Social Change in an International Context**

Introduction to theories, models and methods of community organizing as a strategy for social change in an international context.

Prerequisite(s): SOWK 1001 and SOWK 1002; or PAPM 1001 and PSCI 2003, or permission of the School of Social Work.
Lecture three hours a week.

SOWK 3207 [0.5 credit]**Human Rights Practice in Civil Society**

Examines the advocacy role and capacity of organizations in civil society to increase popular participation in promoting and protecting human rights; includes transnational and national non-governmental organizations, grassroots movements, community organizations, and virtual or Internet-based organizations. Prerequisite(s): SOWK 1001 and SOWK 1002 or PAPM 1000 or HUMR 1001 or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3400 [0.5 credit]**Special Topics in Social Work**

Theory, policy or direct practice topics not covered in the regular course program. Choice of topics varies from year to year.

Prerequisite(s): SOWK 1001 and SOWK 1002 or permission of the School of Social Work.

Lecture three hours a week.

SOWK 3600 [2.0 credits]**Practicum I (Fall and Winter)**

Focus on integrating theory and practice in an approved community setting supervised by a field supervisor. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3601, SOWK 3602.

Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of field work over two terms and concurrent practicum seminars.

SOWK 3601 [2.0 credits]**Practicum I (Winter Term)**

Focus on integrating theory and practice in an approved community setting supervised by a field supervisor; 352 field hours and compulsory field seminars. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3600, SOWK 3602.

Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of field work over one term and concurrent practicum seminars.

SOWK 3602 [2.0 credits]**Practicum I (Fall term)**

Focus on integrating theory and practice in an approved community setting supervised by a field supervisor; 352 field hours and compulsory field seminars. Limited enrolment in this course subject to discretion of Field coordinator. Graded as Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 3601, SOWK 3600.

Prerequisite(s): SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of field work over one term and concurrent practicum seminars.

SOWK 3804 [0.5 credit]**Law of the Family**

Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes.

Also listed as LAWS 3804.

Prerequisite(s): LAWS 1000, LAWS 2201 and LAWS 2003.

Lectures three hours a week.

SOWK 4000 [0.5 credit]**Social Work and Indigenous Peoples**

Social work in partnership with Indigenous peoples in Canada; impact of the past on current relationships; rebuilding through dialogue and respect; understanding Indigenous social work.

Precludes additional credit for SOWK 4200.

Prerequisite(s): third-year standing in Bachelor of Social Work.

Lecture three hours each week.

SOWK 4001 [0.5 credit]**Advanced Social Work Practice with Individuals and Families**

Advanced theory, methods, techniques, and skills for direct social work practice with individuals and families; individual and family assessments, treatment planning, intervention skills, and evaluation.

Includes: Experiential Learning Activity

Prerequisite(s): SOWK 2202 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4002 [0.5 credit]**Advanced Social Work Practice with Groups**

Advanced theory, methods, techniques, and skills for social work with groups; knowledge of group work and various group formats; and social work interventions in group process.

Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4003 [0.5 credit]**Advanced Social Work Practice with Communities**

Advanced theory, methods, techniques and skills for engaging in community-based practice. Politics and challenges of social work community organizing and strategies and skills for community work.

Prerequisite(s): SOWK 2203 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4004 [0.5 credit]**Social Policy Development and Practice**

Social policy development processes in government and non-governmental agencies; refining skills in evaluating and critiquing processes of policy formation; role of lobbying and social activism.

Prerequisite(s): SOWK 3100 and fourth-year standing in the Bachelor of Social Work.

Seminar three hours a week.

SOWK 4102 [0.5 credit]**Indigenous Peoples and Social Policy**

History of colonization, legacy of colonialism, Royal Proclamation, BNA Act, treaties, impact of residential schools; implications of government social policy for Indigenous peoples in Canada; importance of self-determination and Declaration on the Rights of Indigenous Peoples.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4103 [0.5 credit]**Practice and Policy in Immigration**

History of immigration policies in Canada; direct practice with immigrants and refugees; diaspora, settlement and integration issues; immigrants and refugee women; intergenerational family relations; resources and community organizing.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4105 [0.5 credit]**Management of Non-Profit Organizations**

Introduction to theories, models and methods of managing non-profit organizations; role, nature and values of the non-profit sector in a market society; practical knowledge of management in different types of non-profit organizations (e.g. cooperatives, voluntary associations, public advocacy and community service organizations).

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4204 [0.5 credit]**Social Work and Aging**

Social perspectives on aging with focus on models of practice that contribute to the independence of elderly people. Social programs and policies, such as social insurance, social services, housing, public health and health care. Social, psychological and political issues related to independence in later life.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4206 [0.5 credit]**Feminist Counselling**

Examines theory and practice of feminist counselling, feminist counselling skills development.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4209 [0.5 credit]**Special Topics in Direct Social Work Practice**

Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4210 [0.5 credit]**Special Topics in Direct Social Work Practice**

Theory and knowledge development of direct practice topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4211 [0.5 credit]**Special Topics in Social Policy**

Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): SOWK 3100 and third year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4212 [0.5 credit]**Special Topics in Social Policy**

Theory and knowledge development of social policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): SOWK 3100 and third year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4213 [0.5 credit]**Special Topics in Social Work**

Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4214 [0.5 credit]**Special Topics in Social Work**

Theory and knowledge development of a combination of practice and policy topics not in the regular course program. Topics may vary from year to year.

Prerequisite(s): third-year standing or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4300 [0.5 credit]**Social Work and Persons with Disabilities**

Social work theory and practice with persons with disabilities. Structural analysis of theory, models, policies and practices; disability rights; critical analysis of medical model and ableism.

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4301 [0.5 credit]**Racialization and Social Work**

Social work and racialization; racism and consequences; critical analysis of cultural formations, difference, and identities; critical examination of whiteness and privilege.

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4302 [0.5 credit]**Poverty and Social Welfare Policy**

Social work analysis of theories of poverty and economic inequality; labour force participation; poverty and wealth and income distribution in Canada and international comparisons; Canadian social policies and poverty.

Precludes additional credit for SOWK 4101 (no longer offered).

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4303 [0.5 credit]**Gender and Sexuality**

Social work and social, political, institutional and economic relations shaping everyday experiences of gender and sexuality and implications for contemporary social work.

Prerequisite(s): fourth-year standing in the Bachelor of Social Work.

Lecture three hours a week.

SOWK 4600 [2.0 credits]**Practicum II (Fall or Summer Terms)**

Development, application, testing and integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or in social administration and policy. Graded Sat/Uns.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 4601, SOWK 4602.

Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

352 hours of fieldwork and concurrent practicum seminars.

SOWK 4601 [1.0 credit]**Practicum IIA**

Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part one of two part practicum taken consecutively with SOWK 4602.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 4600.

Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

176 hours of fieldwork and concurrent practicum seminars.

SOWK 4602 [1.0 credit]**Practicum IIB**

Development, application, testing, integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns. Part two of two part practicum taken consecutively with SOWK 4601.

Includes: Experiential Learning Activity

Precludes additional credit for SOWK 4600.

Prerequisite(s): third-year standing in the BSW program; SOWK 2001, SOWK 2005, SOWK 2100, SOWK 2202, SOWK 2203, SOWK 3100; SOWK 3600 or 3601 or 3602, SOWK 4601 and permission of the School of Social Work. Student must be in good academic standing in the BSW program and have a 6.00 CGPA in the Social Work major.

176 hours of fieldwork and concurrent practicum seminars.

SOWK 4701 [0.5 credit]**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Law.

Also listed as LAWS 4701.

Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4702 [0.5 credit]**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Sociology.

Also listed as LAWS 4702, SOCI 4702.

Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4703 [0.5 credit]**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the School of Social Work.

Also listed as LAWS 4703.

Prerequisite(s): fourth-year Honours standing or permission of the School of Social Work.

SOWK 4908 [1.0 credit]**Honours Essay**

Research essay under supervision of accredited faculty member. Project may be in the form of case study, historical study or other form that meets the approval of faculty advisor.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Bachelor of Social Work and permission of the School of Social Work.

Sociology (SOCI)

Sociology (SOCI) Courses**SOCI 1001 [0.5 credit]****Introduction to Sociology I**

Introduction to the discipline of sociology; theory, methods, history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society. Emphasis on the everyday world of lived experience and social relations. Topics may include class, gender, sexuality, racialization, culture, social interaction.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 1003.

Lectures/discussion groups three hours a week.

SOCI 1002 [0.5 credit]**Introduction to Sociology II**

This course will further explore and expand upon the key thinkers, concepts and disciplinary subfields in sociology. The focus of analysis will shift from the everyday world to social institutions and structural processes. Topics may include globalization, education, media, health, social movements, colonialism, urbanization.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 1003, SOCI 1005.

Prerequisite(s): SOCI 1001.

Lectures/discussion groups three hours a week.

SOCI 1003 [1.0 credit]**Introduction to Sociological Perspectives**

Introduction to the discipline of sociology; theory, methods and history; key thinkers, concepts and disciplinary subfields in sociology; issues and problems in contemporary society.

Precludes additional credit for SOCI 1000, SOCI 1001 and SOCI 1002.

Lectures/discussion groups three hours a week.

SOCI 1005 [0.5 credit]**Sociology for Bachelor of Commerce Students**

The origins of sociology, why sociology matters, and how it is practiced. Concepts such as class, race, ethnicity, gender, sexual orientation, work, organization, and social movements help students develop their sociological 'eye' for thinking critically about society and their place within it.

Precludes additional credit for SOCI 1002.

Prerequisite(s): restricted to B.Com. students.

Lecture three hours a week.

SOCI 2000 [0.5 credit]**Foundations of Sociological Inquiry**

Introduction to sociological inquiry through the study of sociological approaches to knowledge, the relationship of theory to methods, introduction to different methodological traditions including their epistemological foundations, value and limitations. Students will acquire foundational academic skills.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours per week.

SOCI 2001 [0.5 credit]**Introduction to Qualitative Research Methods**

Introduction to theory and practice of qualitative research methods involving human participants: research design; ethics; data analysis; data generation methods. Methods may include: qualitative interviewing, ethnography, oral history, focus groups, observation. Additional topics may include: historical development/debates in qualitative research/key historical studies.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 2003 (no longer offered).

Prerequisite(s): SOCI 2000.

Lectures/discussion groups or labs three hours a week.

SOCI 2005 [1.0 credit]**Histories of Sociological Thought**

Traces theoretical traditions in sociological thought, situating traditions within historical, social and intellectual contexts. At least four of the following will be covered: orientalism, imperialism, colonialism; capitalism, social organization, rationalization; subject formation, identity; self and the everyday; work and leisure; and, social change and revolution.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2010 [0.5 credit]**Critical Approaches to Economic Inequality**

Theoretical and empirical examination of economic inequalities in Canada. Topics may include the experience of economic marginalization, how economic inequality is reproduced, how economic inequalities intersect with other forces, such as gender and racialized inequality, and struggles to transform the economic organisation of society.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 3405 (no longer offered) and SOCI 3407 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2020 [0.5 credit]**Race and Ethnicity**

Introduction to some of the recent theoretical literature and research on the issues of race, racism and ethnicity. Concepts, controversies and definitions dealing with race and ethnicity from the Canadian context and internationally.

Also listed as ANTH 2020.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2030 [0.5 credit]**Work, Industry and Occupations**

An analysis of work practices and settings in societies. Topics of interest include the development of industrial and postindustrial societies; the experience of work, the structuring of work in organizations and in the society; conflict, resistance and labour relations, and the impact of new technologies.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2035 [0.5 credit]**Technology, Culture and Society**

Introduction to the principal theories and methods used by Science and Technology Studies (STS) scholars to examine the social and cultural shaping of technology. The substantive focus of the course is on the design, development, production, diffusion, consumption and use of technology.

Also listed as DIGH 2035.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2040 [0.5 credit]**Food, Culture and Society**

The sociological analysis of food and eating. The relationship between food and identity; the development of social movements organized around food; and more generally, on practices relating to the production, preparation, and consumption of food.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2043 [0.5 credit]**Sociology of the Family**

How do we conceptualize the family? How has family changed over history? What are the diverse realities of families today? This course examines different family forms, relations and dynamics, emphasizing the relationship between family and larger social forces, such as gender, immigration or class.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2045 [0.5 credit]**Gender and Society**

How gender and gender relations play out in everyday lives, and how people resist, reproduce, or reinforce gender norms. Considers how gender shapes experiences of family, school, work, media, relationships, bodies, violence, etc. Canadian and global cases are examined.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 2407 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2050 [0.5 credit]**Sociology of Health**

Critical approaches to understanding health, illness and healthcare and how social, cultural, political and economic factors affect our health, our experiences with illness, and our encounters with healthcare systems.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2060 [0.5 credit]**Girlhood in Contemporary Contexts: Anthropological and Sociological Perspectives**

Drawing on anthropological and sociological approaches, students will explore girls' lives in diverse cultural, political, economic, and social contexts. Topics may include: movement and migration, education, media, imaging and humanitarianism, consumerism, agency and activism, health, and violence.

Also listed as ANTH 2060.

Prerequisite(s): second year standing or permission of the instructor.

Two hour lecture plus one hour tutorial per week.

SOCI 2080 [0.5 credit]**Humans/Animals: the More-than-Human in Social Research**

Examination of relationships between humans and animals in the sociological and broader social studies canon, including: multispecies ethnography, the role of the 'more than human' in Indigenous legal orders, posthumanist and STS theory, relationships between humans and animals and other non-human entities in the Anthropocene.

Also listed as ANTH 2080.

Lecture/discussion groups three hours per week.

SOCI 2150 [0.5 credit]**Social Psychology**

Theoretical and empirical consideration of society and the individual. Topics include the public realm, situations, roles and interpersonal relations. Beliefs, attitudes, interests and opinions, leadership and decision making, conformity, coercion and compromise may be also examined.

Precludes additional credit for PSYC 2100.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2160 [0.5 credit]**War and Society**

Sociological theory and research on large-scale conflict. How society and culture shape warfare through processes of socialization, bureaucratization, and ideological representation. Social impacts of war in terms of gender, race and ethnicity, class relations, and cultural values.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2170 [0.5 credit]**Foundations in Social Justice**

Introduction to the study of social justice and the theorization of social justice sociology. Critical examination of resistance to oppression, social movements and solidarity both in Canada and transnationally. Exploration of the relationship between the university and community-based action.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2180 [0.5 credit]**Foundations in Community Engagement**

Study of theoretical debates and practical applications relating to community engagement with a focus on Canadian examples. Exploration of the contested and complex meanings of community engagement in and between diverse communities, public institutions, non-profit sector and private enterprise with an emphasis on social justice.

Includes: Experiential Learning Activity

Also listed as ANTH 2180.

Prerequisite(s): Second year standing or permission of instructor.

Lecture, discussion and project work three hours a week.

SOCI 2445 [0.5 credit]**Sociology of Deviance**

The construction of deviant behaviour and the consequences of such construction for both deviant and conforming persons. Emphasis upon deviance as a normal and necessary result of the socio-cultural processes resulting from, and affecting the activities of a viable society.

Precludes additional credit for SOCI 2505 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2450 [0.5 credit]**Crime and Society**

Social reactions to crime, criminalization processes, and the criminal justice system, and their intersection with power relations and social inequalities.

Precludes additional credit for SOCI 2701.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2702 [0.5 credit]**Power and Social Change**

An investigation of power and culture, with a focus on how ordinary people contribute to social change. Topics may include activism, leisure, consumption, identity, fashion, sexuality, tourism, health, pollution and work.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2705 [0.5 credit]**Popular Culture in the Digital Age**

An examination of various approaches to analyzing digital media and their role in the production and consumption of contemporary cultural forms and practices. Students will reflect upon their use of digital media and the influence they have on their lives and popular culture, more generally.

Also listed as DIGH 2705.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2810 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2820 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002.

Lectures/discussion groups three hours a week.

SOCI 2910 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information.

SOCI 2920 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information.

SOCI 3000 [0.5 credit]**Descriptive Statistics in Social Research**

The conceptual foundations of descriptive statistics and applications of these statistics using software (SPSS or Stata) to analyze and interpret social science data. Topics include frequency distributions, graphs, measures of central tendency and dispersion, measures of association, bivariate regression, and introduction to multivariate statistics.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 2002 (no longer offered).

Prerequisite(s): SOCI 2000 and third-year standing.

Lectures/computer labs three hours a week.

SOCI 3002 [0.5 credit]**Inferential Statistics in Social Research**

Inferential statistics and hypotheses testing used in social science research. Topics may include relationship between samples and population, methods of sample selection, central limit theorem, confidence levels and confidence intervals, overview of selected hypothesis tests, multivariate data analysis and multiple regression analysis.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 3003 (no longer offered).

Prerequisite(s): SOCI 3000 or CRCJ 3001 and third-year standing.

Lectures/computer labs three hours a week.

SOCI 3004 [0.5 credit]**Qualitative Research: Approaches and Strategies**

Specialized examination of select strategies or approaches to qualitative research. Topics may include: advanced application of research design involving human participants; historical research methods; textual/document-based research; visual sociologies; critical methodologies (such as feminist or decolonizing methods).

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 2001 and third-year standing.

Lectures/computer labs three hours per week.

SOCI 3006 [0.5 credit]**Thinking the Social: Theories and Approaches**

Examination of a select sociological tradition or thinker, or theoretically intensive study of a sociological area. Consult the department for topics offered.

Precludes additional credit for SOCI 3005 (no longer offered), SOCI 4006 (no longer offered).

Prerequisite(s): SOCI 2005 and third-year standing.

Lectures/discussion groups three hours a week.

SOCI 3010 [0.5 credit]**Power, Oppression and Resistance**

What makes inequalities so persistent? Theoretical and empirical examination of the intersection of social inequalities in Canada and globally, including class, gender, race and ethnicity and age; study of resistance to structures and cultures of inequalities.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3019 [0.5 credit]**Sociology of International Migration**

This course draws from global and interdisciplinary theoretical perspectives to examine primarily though not exclusively Canadian immigration policy and the socio-historical forces shaping policy, migration patterns, permanent, temporary and circular migration, the experiences of immigrants, refugees and migrants; and diasporic and transnational communities and identities.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours per week.

SOCI 3020 [0.5 credit]**Studies in Race and Ethnicity**

Race, racism and ethnicity in Canada and internationally. Critical perspectives on race and ethnicity, which intersect with other social relations. Racism, Eurocentrism, Orientalism, nationalism, colonialism, international migration, citizenship, and diasporic cultures. Also listed as ANTH 3020.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3027 [0.5 credit]**Globalization and Human Rights**

Examination of the various dimensions and meanings of globalization and its relationship with human rights, with emphasis on the implications of the emerging global economy for economic, social, political and cultural rights. Also listed as ANTH 3027, PSCI 3802.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3030 [0.5 credit]**Studies in Work, Industry and Occupations: Authority and Expertise**

The nature and place of expert knowledge in societies. The development of the practices and organization of the professions and their relation to social stratification, the state, patriarchy and gender; the systematic development of knowledge in societies.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 2508 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3035 [0.5 credit]**Science, Culture and Society: Social Studies of Science**

Principal theories and methods used by Science and Technology Studies scholars to examine the social construction of scientific knowledge. Topics may include the demarcation of science from non-science, the relationship between experts and laypersons, and the study of scientific controversies.

Also listed as ANTH 3035.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3038 [0.5 credit]**Studies in Urban Sociology**

Issues related to people and the urban environment, including the historical process of urbanization, rural-urban transition, the diffusion of urban values and life styles, contemporary urban problems such as urban renewal, pollution and the pressures of the urban environment on social institutions.

Precludes additional credit for SOCI 2504 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3040 [0.5 credit]**Studies in the Sociology of Gender**

Sociological and feminist perspectives; applied understandings of gender, gender relations; women's and men's lives in contemporary Canadian society and in historical and cross-cultural terms. Multiple intersections between gender, race, ethnicity, class and sexuality.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3044 [0.5 credit]**Sociology of Sex and Sexuality**

Key concepts of sex, sexuality, gender, eroticism and pleasure. The history of sex and sexuality. The regulation of sexual relations and practices. Social movements relating to sexuality, gender identities and sexual equality.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3045 [0.5 credit]**Children and Childhood in a Globalized World**

A socio-historical and cross-cultural exploration of constructions, deconstructions, and the experience of childhood in Canada and internationally. Compulsory schooling, child labour, protection and regulation in law, the commodification and equalization of childhood, children's social movements, and the emergence of children's rights discourses.

Also listed as ANTH 3045.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3050 [0.5 credit]**Studies in the Sociology of Health**

Current theory and research on health, disease and social responses to health issues. Topics include population differences incidence and prevalence of morbidity and mortality, access to care and government health policy. Focus upon cultural definitions of health and their consequences for health promotion practices.

Precludes additional credit for SOCI 3705.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3055 [0.5 credit]**Studies in Addictions**

Survey of alcohol and other drug use in cross-cultural and sub-group perspectives. Relationships between culture, social structure and patterns of use of psychoactive substances. Topics may include: substance use and the life cycle; gender and psychoactive substances; problem and non-problem use.

Precludes additional credit for SOCI 3001.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3056 [0.5 credit]**Women and Health**

Women's health issues and how they relate to social, political and economic factors. The intersection of gender, ethnicity, class, sexual orientation and able-bodiedness with women's health.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Seminar 3 hours per week.

SOCI 3060 [0.5 credit]**Critical Disability Studies**

Course engages contemporary disability theory, culture, and activism to consider bodily difference and its relation to the workings of power and social control, accessibility, normalization, ableism, and medicalization. Students will gain an understanding of the contemporary debates, theories, and methodologies of critical disability studies. Also listed as DBST 3060.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lectures three hours a week.

SOCI 3150 [0.5 credit]**Sociology of Rightwing Populism**

This course will make sense of Trumpism and other rightwing populisms by interrogating their sociological backgrounds and histories. Students will learn to recognize the systems and structures that make populist leaders possible, and how trends in North America relate to far-right movements elsewhere.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3160 [0.5 credit]**Political Violence**

Sociological examination of political violence. Theoretical analysis of violence as social action that is historically situated and shaped by cultural and economic forces; the relationship between political violence and identity, nation/nationalism, modernity and globalisation.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third year standing.

Lectures three hours a week.

SOCI 3170 [0.5 credit]**Social Justice in Action**

Current debates in social justice theory and practice. The course includes substantial engagement with community actors, including activists and advocates as guest speakers. Students will be exposed to social justice principles applied in the community through a variety of approaches.

Includes: Experiential Learning Activity

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3210 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3220 [0.5 credit]**Selected Topics in Sociology**

Selected topics in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3300 [0.5 credit]**Studies in the Sociology of Education**

Critical analysis of selected work in educational sociology. Topics may include sociological theories of education, school ethnography, contemporary educational policy and practice. Note: Topic will vary in keeping with the interests of students and instructor.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3410 [0.5 credit]**Studies in Criminal Justice**

Developments in criminal justice are examined in the context of broader social issues. Particular emphasis will be placed on contemporary developments in criminal justice institutions, programs and practices.

Includes: Experiential Learning Activity

Precludes additional credit for SOCI 3808 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3420 [0.5 credit]**Studies in Gender and Criminal Justice**

An overview of current issues related to women as both perpetrators and victims of crime and the Canadian criminal justice system's response to them. Topics may include woman abuse, sexual assault, and federally sentenced women.

Precludes additional credit for SOCI 3201 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3430 [0.5 credit]**Studies in Collective Action and Social Movements**

What is a social movement? How do sociologists distinguish between social movements and revolutions? What factors influence social movement development? What do they look like? Theoretical and empirical study of the relationship between social movements and social change.

Precludes additional credit for SOCI 3408 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3450 [0.5 credit]**Studies in Law Enforcement**

A comparative examination of contemporary law enforcement. Topics may include public versus private policing, centralized versus decentralized policing, and transnational policing.

Precludes additional credit for SOCI 3507 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3480 [0.5 credit]**Law and Social Regulation**

A study of sociological theories of law as well as the nature of legal institutions. Impacts of legal regulation on various social institutions and on processes of social debate and conflict.

Also listed as LAWS 3106.

Precludes additional credit for SOCI 3801 (no longer offered).

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0], or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3570 [0.5 credit]**Studies in Art, Culture and Society**

Aesthetic practices and institutions. Production and reception of diverse art forms (visual, musical, corporeal, etc.) in various sociocultural contexts. Institutions dedicated to supporting such practices (e.g., museums, theatres, festivals, rituals) are examined through a range of theoretical perspectives.

Also listed as ANTH 3570.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3710 [0.5 credit]**Introduction to Cultural Studies**

Research and theory in the interdisciplinary area of Cultural Studies. Contemporary cultural change in the advanced industrialized societies and its impact on everyday life.

Includes: Experiential Learning Activity

Precludes additional credit for ANTH 3710.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3805 [0.5 credit]**Studies in Population**

Historical and current debates on population growth.

Historical declines in fertility and mortality from an international perspective. Contemporary demographic issues such as low fertility, longevity revolution, population aging, inequalities in health, migration and refugees.

Prerequisite(s): SOCI 1001 and SOCI 1002, or SOCI 1003 [1.0]; or ANTH 1001, or ANTH 1002, and third-year standing.

Lecture three hours a week.

SOCI 3910 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information, as departmental permission is required.

SOCI 3920 [0.5 credit]**Course-Related Tutorials in Sociology**

Consult the Department for information, as departmental permission is required.

SOCI 3950 [0.5 credit]**Practicum Placement in Sociology**

This course provides students with the opportunity to apply academic skills and knowledge while working within a sociology-related organization. Placements are organized with support from a co-ordinator.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Sociology with a GPA of 9.00 or higher and permission of the course instructor.

Placement six to eight hours a week.

SOCI 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

SOCI 4002 [0.5 credit]**Advanced Studies in Sociological Theory**

Close study of the works of an author, tendency, or school of thought in theoretical sociology. Topic will vary in keeping with interests of the students and instructor.

Prerequisite(s): SOCI 3006 and fourth-year standing.

Seminar three hours a week.

SOCI 4003 [0.5 credit]**Advanced Studies in Qualitative Research**

In-depth study into selected issues in qualitative research design, implementation and data analysis. Topics covered may include participant observation, ethnomethodology, ethnography, grounded theory, discourse analysis, narrative analysis, textual analysis, and document analysis. Intersections between epistemologies and methodologies.

Precludes additional credit for ANTH 4003.

Prerequisite(s): SOCI 3004 and fourth-year standing.

Seminar three hours a week.

SOCI 4009 [0.5 credit]**Advanced Studies in Quantitative Research**

Study of specific quantitative methodological issues.

Focus may be on one or two of the following topics:

quantitative research design, sampling techniques, survey research methods and various statistical research methods including OLS and logistic regression.

Precludes additional credit for SOCI 4840 (no longer offered).

Prerequisite(s): SOCI 3002 and fourth-year standing.

Seminar/lab three hours a week.

SOCI 4020 [0.5 credit]**Advanced Studies in Race and Ethnicity**

Selected topics in race and ethnicity in an international context. Specific topics will vary according to instructors' research interests.

Also listed as ANTH 4020.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4039 [0.5 credit]**Women in Contemporary Middle East Societies**

Socio-economic, political and cultural realities of Middle Eastern women with focus on their lived experiences, voices and stories. Focus on women in Palestine/Israel with consideration of other Middle Eastern women.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4040 [0.5 credit]**Feminist Sociology of Intersectionality**

Theoretical and empirical examination of gender relations and gendered inequality with emphasis on the complex intersection of gender with race, ethnicity, religion, class, sexuality, (dis)ability and other relations of power in feminist scholarship, social justice movements, law and policy.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4043 [0.5 credit]**Families in the 21st Century**

Examination of contemporary family forms including single-parent-, blended/step-, LGBTQ- and common-law families. Topics may include theoretical perspectives; reproductive technologies; globalization; migration; interracial families; cohabitation; separation/divorce; motherhood/fatherhood; childcare/domestic labour; children/youth; intergenerational relations; social class/poverty; family policies and family law.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4160 [0.5 credit]**War, Terrorism and State Terrorism**

Critical theoretical and empirical analysis of violent political conflict. Examination of transformations and continuities of war, terrorism and state terrorism; modalities of political violence, such as torture or disappearance; responses to violent conflict; and the representation and construction of political violence.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4170 [0.5 credit]**Community-Engaged Sociology**

Students will apply their sociological education working with community organizations in small teams to research issues and advocate for positive social change. Each team's project will include public education, sociological analysis and creating a tangible product for the partner organization.

Includes: Experiential Learning Activity

Prerequisite(s): third-year or fourth-year standing, or permission from the instructor of SOCI 4170.

Lectures, discussion and project work three hours a week.

SOCI 4171 [0.5 credit]**Community Engagement Capstone**

Students in the capstone will reflect on their engagement experiences and advance their critical understanding of community through a series of in-class activities and readings. Students will produce a public-facing artifact (e.g., blog, podcast, video) related to their experiences, potentially in collaboration with community partners.

Includes: Experiential Learning Activity

Also listed as ANTH 4171.

Prerequisite(s): SOCI 2180 and fourth year standing or permission of the instructor.

Lecture, discussion and project work three hours a week.

SOCI 4200 [0.5 credit]**War, Security and Citizenship**

Critical theoretical and multidisciplinary examination of violent conflict, security and citizenship. How wars produce a variety of abject and new subjects, create and reproduce citizenship hierarchies, and expand and contract citizenship entitlements.

Also listed as ANTH 4200.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4410 [0.5 credit]**Advanced Studies in Criminology**

Crime, criminal justice, social processes relating to the implementation of criminal justice policy, or other aspects of criminality and deviance.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4480 [0.5 credit]**Advanced Studies in the Sociology of Law**

Contemporary debates about the role of law in society focusing on the potential and limits of law as a vehicle of social transformation.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4700 [0.5 credit]**Honours Capstone Seminar**

Students carry out a small-scale research project to hone transferable skills acquired over the course of the degree programme.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4702 [0.5 credit]**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced.

Also listed as LAWS 4702, SOWK 4702.

Prerequisite(s): fourth-year standing.

Seminars three hours a week.

SOCI 4730 [0.5 credit]**Colonialism and Post-Colonialism**

Comparative ethnographic and historical approaches to colonialism including topics such as the formation of colonial regimes, colonial governmentality, servile labour systems, missionization, anti-colonial resistance, cultural hybridization and post-colonial memory. Exploration of debates over the relation between colonialism and the production of social scientific knowledge.

Also listed as ANTH 4730.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4750 [0.5 credit]**Advanced Studies in Globalization and Citizenship**

Selected topics on the confluence of processes of globalization, development and citizenship; examination of debates about the meaning and impact of globalization on patterns of inequality and citizenship both internationally and within Canada, and about strategies for progressive development.

Also listed as ANTH 4750.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4810 [0.5 credit]**Advanced Studies in Social Policy**

An examination of sociological research and social intervention.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4850 [0.5 credit]**Contemporary Problems in Sociology**

Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4860 [0.5 credit]**Contemporary Problems in Sociology**

Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite(s): fourth-year standing.

Seminar three hours a week.

SOCI 4900 [1.0 credit]**Honours Thesis**

An independent research project under the supervision of a faculty member. Seminar supports students through each stage of the research process: development of a research question, designing the project, crafting a proposal, carrying out data generation and analysis, and writing the final thesis.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Sociology B.A. Honours with a CGPA of 9.00 or higher in the Major or by permission of the instructor. Students are strongly encouraged to locate a faculty member to supervise their Honours Thesis prior to the start of this course. Seminars on a bi-weekly basis (three hours).

SOCI 4910 [0.5 credit]**Tutorial in Sociology**

Consult the Department for information.

SOCI 4920 [0.5 credit]**Tutorial in Sociology**

Consult the Department for information.

Spanish (SPAN)

Spanish (SPAN) Courses

Placement for Language Students

Note: A placement test is required for students who have previous training and/or experience, but who have not taken a course in this language at Carleton. For details, please consult carleton.ca/slals/modern-languages and follow the placement test instructions before registering.

Students who are found to be registered in an inappropriate level of the course will be deregistered following assessment by their instructor (and/or the Director of the School). It is crucial for students to complete the placement test in a manner that truly demonstrates their language proficiency.

Students should note that they cannot go backward in a sequence of levels in language courses.

SPAN 1010 [0.5 credit]**First-Year Spanish I**

For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for SPAN 1110.

Four hours a week.

SPAN 1020 [0.5 credit]**First-Year Spanish II**

Continuation of first-year Spanish. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for SPAN 1110.

Prerequisite(s): grade of C or higher in SPAN 1010, or permission of the School.

Four hours a week.

SPAN 1110 [1.0 credit]**Intensive First-Year Spanish**

For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance.

Precludes additional credit for SPAN 1010 or SPAN 1020.

Eight hours a week (one term).

SPAN 2010 [0.5 credit]**Second-Year Spanish I**

Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for SPAN 2110.

Prerequisite(s): grade of C or higher in SPAN 1020, SPAN 1110, or permission of the School.

Four hours a week.

SPAN 2020 [0.5 credit]**Second-Year Spanish II**

Continuation of second-year Spanish. Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for SPAN 2110.

Prerequisite(s): grade of C or higher in SPAN 2010, or permission of the School.

Four hours a week.

SPAN 2110 [1.0 credit]**Intensive Second-Year Spanish**

Further study of Spanish to reach a more advanced level of proficiency in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for SPAN 2010, SPAN 2020.

Prerequisite(s): grade of C or higher in SPAN 1020, SPAN 1110, or permission of the School.

Eight hours a week (one term).

SPAN 3010 [0.5 credit]**Third-Year Spanish I**

Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for SPAN 3110.

Prerequisite(s): grade of C or higher in SPAN 2020, SPAN 2110, or permission of the School.

Three hours a week.

SPAN 3020 [0.5 credit]**Third-Year Spanish II**

Continuation of third-year Spanish. Progress toward a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for SPAN 3110.

Prerequisite(s): grade of C or higher in SPAN 3010 or SPAN 3015, or permission of the School.

Three hours a week.

SPAN 3110 [1.0 credit]**Intensive Third-Year Spanish**

Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for SPAN 3010, SPAN 3020.

Prerequisite(s): grade of C or higher in SPAN 2020, SPAN 2110, or permission of the School.

Six hours a week (one term).

SPAN 3220 [0.5 credit]**Introduction to Spanish Linguistics**

Introduction to principles of linguistic analysis, illustrated through Spanish. Sound systems, word structures and sentence structures of Spanish. Basic principles of language variation and change, as evidenced in the development of Spanish. Linguistic aspects of bilingualism as manifested in Spanish/English bilinguals.

Prerequisite(s): SPAN 3020 or SPAN 3110 or permission of the School.

Three hours a week.

SPAN 4010 [0.5 credit]**Fourth-Year Spanish I**

Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Precludes additional credit for SPAN 4110.

Prerequisite(s): grade of C or higher in SPAN 3020, SPAN 3110, or permission of the School.

Three hours a week.

SPAN 4015 [0.5 credit]**Spanish for Heritage Speakers I**

For students who have attained Spanish language proficiency in informal settings. This course formalizes grammar awareness, enhances literacy skills, and develops existing language abilities in a formal academic setting.

Precludes additional credit for all SPAN courses numbered 4110 and below.

Prerequisite(s): permission of the School.
Online.

SPAN 4020 [0.5 credit]**Fourth-Year Spanish II**

Continuation of fourth-year Spanish. Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study. Compulsory attendance.

Precludes additional credit for SPAN 4110.

Prerequisite(s): grade of C or higher in SPAN 4010, or permission of the School.

Three hours a week.

SPAN 4025 [0.5 credit]**Spanish for Heritage Speakers II**

For students who have started to develop existing Spanish language abilities in a formal academic setting. This course enhances students' written expression while building on advanced knowledge of Spanish grammar and vocabulary.

Precludes additional credit for all SPAN courses numbered 4110 and below.

Prerequisite(s): SPAN 4015 or permission of the School.
Online.

SPAN 4110 [1.0 credit]**Intensive Fourth-Year Spanish**

Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study.

Compulsory attendance.

Includes: Experiential Learning Activity

Precludes additional credit for SPAN 4010 or SPAN 4020.

Prerequisite(s): grade of C or higher in SPAN 3020, SPAN 3110, or permission of the School.

Six hours a week (one term).

SPAN 4215 [0.5 credit]**Spanish for Specific Purposes**

Development of language use for specific purposes in contexts such as the academic, business and technical domains.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.

Three hours a week.

SPAN 4320 [0.5 credit]**Topics in Spanish Linguistics**

Selected topic in Spanish linguistics.

Includes: Experiential Learning Activity

Prerequisite(s): LING 1001 or SPAN 3220, and grade of C or higher in SPAN 4020 or 4110, or permission of the School.

Three hours a week.

SPAN 4380 [0.5 credit]**Topics in Spanish-speaking Cultures**

Selected topics in Spanish-speaking cultures and societies. Development of advanced language skills.

Includes: Experiential Learning Activity

Prerequisite(s): grade of C or higher in SPAN 4020 or SPAN 4110, or permission of the School.

Three hours per week.

SPAN 4900 [1.0 credit]**Independent Study**

Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

SPAN 4901 [0.5 credit]**Independent Study**

Research in a topic in Spanish language, literature or linguistics under the supervision of a member of the School.

Includes: Experiential Learning Activity

Prerequisite(s): third- or fourth-year standing in the Minor in Spanish, grade of C or higher in SPAN 4020 or SPAN 4110 or equivalent, or permission of the School.

Statistics (STAT)

Statistics (STAT) Courses**STAT 1500 [0.5 credit]****Introduction to Statistical Computing**

Basics of programming in R and introduction to statistical software; generating statistical plots; computing descriptive statistics; performing basic statistical procedures; fundamentals of numerical analysis; optimization; generating random numbers, performing simple simulations and simulation-based inference.

Includes: Experiential Learning Activity

Prerequisite(s): Ontario Grade 12 Mathematics: Advanced Functions, or MATH 0005, or equivalent.

Lectures three hours a week, laboratory one hour a week.

STAT 2507 [0.5 credit]**Introduction to Statistical Modeling I**

A data-driven introduction to statistics. Basic descriptive statistics, introduction to probability theory, random variables, discrete and continuous distributions, contingency tables, sampling distributions, distribution of sample mean, Central Limit Theorem, interval estimation and hypothesis testing. A statistical software package will be used.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2601, STAT 2606, and STAT 3502.

May not be counted for credit in any program if taken after successful completion of STAT 2559.

Prerequisite(s): an Ontario Grade 12 university-preparation Mathematics or equivalent, or permission of the School of Mathematics and Statistics.

Lectures three hours a week, laboratory one hour a week.

STAT 2509 [0.5 credit]**Introduction to Statistical Modeling II**

A data-driven approach to statistical modeling. Basics of experimental design, analysis of variance, simple linear regression and correlation, nonparametric procedures. A statistical software package will be used.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 2602, STAT 2607, ECON 2202, ECON 2220.

Prerequisite(s): STAT 2507 or STAT 2601 or STAT 2606 or STAT 3502; or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 2559 [0.5 credit]**Basics of Statistical Modeling (Honours)**

Estimation and hypothesis testing for one and two samples, analysis of categorical data, basics of experimental design, analysis of variance, simple linear regression and correlation. Nonparametric procedures. A statistical software package will be used.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 2655 or permission of the School.

Lectures three hours a week, tutorial/laboratory one hour a week.

STAT 2601 [0.5 credit]**Business Statistics**

Introduction to statistical computing, descriptive statistics, probability concepts, interval estimation and hypothesis testing, categorical data analysis. Introduction to simple regression, multiple regression, and time series. Emphasis on the development of an ability to interpret results of statistical analyses with applications from business.

Includes: Experiential Learning Activity

Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, ENST 2006, GEOG 2006, STAT 2507, STAT 2606 (no longer offered) and STAT 3502.

Prerequisite(s): MATH 1009. Restricted to B.Com. and B.I.B students.

Lectures three hours a week and laboratory one hour a week.

STAT 2602 [0.5 credit]**Statistical Models for Business Analytics and Finance**

Analysis of variance, multiple regression (including polynomial regression), logistic and Poisson regression, probit models, time series (including decomposition into components, exponential smoothing, model diagnostics and ARIMA models), Monte Carlo simulation.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 2607 (no longer offered).

Prerequisite(s): STAT 2601.

Lectures three hours a week and laboratory one hour a week.

STAT 2605 [0.5 credit]**Probability Models**

Basic probability; discrete random variables with focus on binomial and Poisson random variables; continuous random variables, transformation theorem, simulating continuous random variables; exponential random variable, normal random variable, sums of random variables, central limit theorem. Elements of Markov chains, and introduction to Poisson processes. Precludes additional credit for STAT 2655 and STAT 3502. Prerequisite(s): MATH 1007 or MATH 1004 or MATH 1002 (no longer offered) or MATH 1052, and MATH 1104 or MATH 1107 or MATH 1102 (no longer offered) or MATH 1152. Restricted to students in Bachelor of Computer Science and Bachelor of Mathematics in Computer Mathematics. Lectures three hours a week, tutorial one hour a week.

STAT 2655 [0.5 credit]**Introduction to Probability with Applications (Honours)**

Probability axioms, basic combinatorial analysis, conditional probability and independence, discrete and continuous random variables, joint and conditional distributions, expectation and moments, probability and moment generating functions, Chebyshev's inequality and weak law of large numbers, central limit theorem, sampling distributions, simulation and applications to descriptive statistics. Precludes additional credit for STAT 2605. Prerequisite(s): MATH 2052 with a grade of C+ or higher or MATH 2007 or MATH 1005 with a grade of B+ or higher; and MATH 2152 with a grade of C+ or higher or MATH 1107 with a grade of B+ or higher; or permission of the School. Lectures three hours a week, tutorial one hour a week.

STAT 2660 [0.5 credit]**Mathematics for Finance (Honours)**

Interest rates, growth of money, discount functions, yield rates, time value of money, annuities, cash flows and portfolios, loans, mortgages, bonds, immunization, swaps, hedging and investment strategies, stocks and financial markets, arbitrage. Prerequisite(s): i) one of MATH 2052 or MATH 2007 or MATH 1005, grade of C+ or higher; and ii) one of MATH 1152 or MATH 1107 or MATH 1104, grade of C+ or higher; or permission of the School. Lectures three hours a week, tutorial one hour a week.

STAT 2907 [0.5 credit]**Directed Studies (Honours)**

Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3502 [0.5 credit]**Probability and Statistics**

Axioms of probability; conditional probability and independence; random variables; distributions: binomial, Poisson, hypergeometric, normal, gamma; central limit theorem; sampling distributions; point estimation: maximum likelihood, method of moments; confidence intervals; testing of hypotheses: one and two populations; engineering applications: acceptance sampling, control charts, reliability. Includes: Experiential Learning Activity. Precludes additional credit for BIT 2000, BIT 2009, BIT 2100 (no longer offered), BIT 2300 (no longer offered), ECON 2201 (no longer offered), ECON 2210, STAT 2507, STAT 2605, STAT 2601, and STAT 2606. Prerequisite(s): MATH 2004 and enrolment in the Faculty of Engineering or B.Sc. programs of the Department of Physics [except Double Honours Mathematics and Physics]. Lectures three hours a week and one hour laboratory.

STAT 3503 [0.5 credit]**Regression Analysis**

Review of simple and multiple regression with matrices, Gauss-Markov theorem, polynomial regression, indicator variables, residual analysis, weighted least squares, variable selection techniques, nonlinear regression, correlation analysis and autocorrelation. Computer packages are used for statistical analyses. Includes: Experiential Learning Activity. Precludes additional credit for STAT 3553. Prerequisite(s): i) STAT 2509 or STAT 2602 or STAT 2607 or ECON 2202 or ECON 2220 or equivalent; and ii) MATH 1152 or MATH 1107 or MATH 1119 or equivalent; or permission of the School. Lectures three hours a week and one hour laboratory.

STAT 3504 [0.5 credit]**Analysis of Variance and Experimental Design**

Single and multifactor analysis of variance, orthogonal contrasts and multiple comparisons, analysis of covariance; nested, crossed and repeated measures designs; completely randomized, randomized block, Latin squares, factorial experiments, related topics. Computer packages are used for statistical analyses. Includes: Experiential Learning Activity. Precludes additional credit for STAT 4504. Prerequisite(s): STAT 3503 or permission of the School. Lectures three hours a week and one hour laboratory.

STAT 3506 [0.5 credit]**Stochastic Processes and Applications (Honours)**

Conditional probability and conditional expectation; Stochastic modeling; discrete time Markov chains including classification of states, stationary and limiting distributions; exponential distribution and the Poisson processes; queueing models; applications to computer systems, operations research and social sciences. Prerequisite(s): STAT 2655 with a grade of C- or higher; or permission of the School. Lectures three hours a week, tutorial one hour a week.

STAT 3507 [0.5 credit]**Sampling Methodology**

The sample survey as a vehicle for information collection in government, business, scientific and social agencies. Topics include: planning a survey, questionnaire design, simple random, stratified, systematic and cluster sampling designs, estimation methods, problem of non-response, related topics.

Includes: Experiential Learning Activity

Prerequisite(s): one of: STAT 2507, STAT 2509, STAT 2601, STAT 2602, STAT 2606, STAT 2607, ECON 2201, ECON 2202, ECON 2210, ECON 2220, or equivalent; or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3508 [0.5 credit]**Elements of Probability Theory**

Discrete and continuous distributions, moment-generating functions, marginal and conditional distributions, transformation theory, limiting distributions.

Precludes additional credit for STAT 3558 and STAT 3608.

Prerequisite(s): i) MATH 2008 (or MATH 2004 or MATH 2009); and ii) one of STAT 2507, STAT 2601, STAT 2606, ECON 2200, or ECON 2201 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3509 [0.5 credit]**Mathematical Statistics**

Point and interval estimation, sufficient statistics, hypothesis testing, chi-square tests with enumeration data. Precludes additional credit for STAT 3559.

Prerequisite(s): STAT 3508 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3553 [0.5 credit]**Regression Modeling (Honours)**

Linear regression - theory, methods and application(s). Normal distribution theory. Hypothesis tests and confidence intervals. Model selection. Model diagnostics. Introduction to weighted least squares and generalized linear models.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 3503.

Prerequisite(s): i) STAT 2559 with a grade of C- or higher, or STAT 2509 with a grade of B or higher; and ii) a grade of C- or higher in MATH 1152 or MATH 1107 or MATH 1104; or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 3558 [0.5 credit]**Elements of Probability Theory (Honours)**

Random variables and moment-generating functions, concepts of conditioning and correlation; laws of large numbers, central limit theorem; multivariate normal distribution; distributions of functions of random variables, sampling distributions, order statistics.

Precludes additional credit for STAT 3508 and STAT 3608.

Prerequisite(s): i) STAT 2655 with a grade of C- or higher; and ii) MATH 2000 with a grade of C- or higher, or (a grade of C+ or higher in MATH 2008 or MATH 2004, and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3559 [0.5 credit]**Mathematical Statistics (Honours)**

Empirical distribution functions, Monte Carlo methods, elements of decision theory, point estimation, interval estimation, tests of hypotheses, robustness, nonparametric methods.

Precludes additional credit for STAT 3509.

Prerequisite(s): STAT 3558 with a grade of C- or higher; or (STAT 3508 with a grade of B or higher, and permission of the instructor); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3660 [0.5 credit]**Actuarial Mathematics I**

Severity, frequency models, loss models, risk measures, value at risk, stochastic processes, Poisson process, characteristics of actuarial models, creating new univariate distributions, heavy-tailed distributions, mixed distributions, coverage modifications.

Prerequisite(s): STAT 2655, or permission from the school.

Lectures three hours a week, tutorial one hour a week.

STAT 3661 [0.5 credit]**Life Contingent Risk Modelling I**

Introduction to life insurance; traditional and modern insurance contracts; underwriting; premiums; present value random variable; force of mortality; life tables; insurance benefits; annuities; premium calculation, reserves.

Prerequisite(s): STAT 2660 and STAT 3660, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3907 [0.5 credit]**Directed Studies**

Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

STAT 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

STAT 4500 [0.5 credit]**Parametric Estimation (Honours)**

Preliminaries on probability theory; exact and asymptotic sampling distributions; unbiasedness, consistency, efficiency, sufficiency and completeness; properties of maximum likelihood estimators; least squares estimation of location and scale parameters based on order statistics and sample quantiles; Best Asymptotically Normal (BAN) estimators.

Prerequisite(s): STAT 3559 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5600, for which additional credit is precluded.

Lectures three hours a week.

STAT 4501 [0.5 credit]**Probability Theory (Honours)**

Introduction to probability, characteristic functions, probability distributions, limit theorems.

Prerequisite(s): STAT 3506 and STAT 3558 or permission of the School.

Lectures three hours a week.

STAT 4502 [0.5 credit]**Survey Sampling (Honours)**

Basic concepts in sampling from finite populations; simple random sampling; stratified sampling; choice of sampling unit; cluster and systematic sampling; introduction to multistage sampling; ratio estimation; sampling with unequal probabilities and with replacement; replicated sampling; related topics.

Prerequisite(s): i) STAT 2559 or STAT 2509; and ii) either STAT 3559, or a grade of C + or better in STAT 3509; or permission of the School.

Lectures three hours a week.

STAT 4503 [0.5 credit]**Applied Multivariate Analysis (Honours)**

Selected topics in regression and correlation non-linear models. Multivariate statistical methods, principal components, factor analysis, multivariate analysis of variance, discriminant analysis, canonical correlation, analysis of categorical data.

Prerequisite(s): STAT 3553 or (STAT 3509 and STAT 3503) or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5509, for which additional credit is precluded.

Lectures three hours a week.

STAT 4504 [0.5 credit]**Statistical Design and Analysis of Experiments (Honours)**

An extension of the designs discussed in STAT 2559 to include analysis of the completely randomized design, designs with more than one blocking variable, incomplete block designs, fractional factorial designs, multiple comparisons; and response surface methods.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 3504 and ECON 4706. PSYC 3000 is precluded for additional credit for students registered in a Mathematics program.

Prerequisite(s): STAT 3553 or STAT 3503; or permission of the School of Mathematics and Statistics.

Lectures three hours a week, laboratory one hour a week.

STAT 4506 [0.5 credit]**Nonparametric Statistics (Honours)**

Order statistics; projections; U-statistics; L-estimators; rank, sign, and permutation test statistics; nonparametric tests of goodness-of-fit, homogeneity, symmetry, and independence; nonparametric density estimation; nonparametric regression analysis: kernel estimators, orthogonal series estimators, smoothing splines; high-dimensional inference and false discovery.

Prerequisite(s): STAT 3559 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5516, for which additional credit is precluded.

Lectures three hours a week.

STAT 4507 [0.5 credit]**Statistical Inference (Honours)**

Sufficient statistics, simple and composite hypotheses, most powerful and similar region test, distribution-free tests, confidence intervals, goodness-of-fit and likelihood ratio tests, large sample theory, Bayesian and likelihood methods, sequential tests.

Prerequisite(s): STAT 4500 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5501, for which additional credit is precluded.

Lectures three hours a week.

STAT 4508 [0.5 credit]**Stochastic Models (Honours)**

Review of discrete Markov chains and Poisson processes; continuous time Markov chains; pure jump Markov processes, and birth and death processes including the Q-matrix approach; the Kolmogorov equations; renewal theory; introduction to Brownian motion; queueing theory.

Prerequisite(s): STAT 3506 or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5701, for which additional credit is precluded.

Lectures three hours a week.

STAT 4509 [0.5 credit]**Advanced Mathematical Modeling (Honours)**

Real-life situations in the physical, social, and life sciences are often modeled using mathematical tools. This course will examine various models and techniques used in their analysis, e.g., matrix procedures in connection with population models. Students will use a computer package to obtain numerical results.

Prerequisite(s): i) MATH 2454 and STAT 2655 (or MATH 2404 and STAT 2605) and ii) STAT 3506; or permission of the School.

Also offered at the graduate level, with different requirements, as STAT 5601, for which additional credit is precluded.

Lectures three hours a week.

STAT 4555 [0.5 credit]**Monte Carlo Simulation (Honours)**

Basic ideas and algorithms of Monte Carlo; simulation of basic stochastic processes. Brownian motion and the Poisson process, applications to financial modelling, queueing theory. Output analysis; variance reduction. Markov chain Monte Carlo methods; Gibbs sampling, simulated annealing and Metropolis-Hastings samplers with applications.

Includes: Experiential Learning Activity

Precludes additional credit for STAT 3555 (no longer offered).

Prerequisite(s): STAT 3558, or a grade of B or higher in STAT 3508, or permission of the School.

Lectures three hours a week, tutorial/laboratory one hour a week.

STAT 4601 [0.5 credit]**Data Mining I (Honours)**

Data visualization; knowledge discovery in datasets; unsupervised learning: clustering algorithms; dimension reduction; supervised learning: pattern recognition, smoothing techniques, classification. Computer software will be used.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 3553 or STAT 3503 or MATH 3806, or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 4603 [0.5 credit]**Time Series and Forecasting (Honours)**

Time series regression. Nonstationary and stationary time series models. Nonseasonal and seasonal time series models. ARIMA (Box-Jenkins) models. Smoothing methods. Parameter estimation, model identification, diagnostic checking. Forecasting techniques. A statistical software package will be used.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 3553 or STAT 3503, or permission of the School.

Lectures three hours a week.

STAT 4604 [0.5 credit]**Statistical Computing (Honours)**

Statistical computing techniques, pseudo-random number generation, tests for randomness, numerical algorithms in statistics; optimization techniques; environments for data analysis, efficient programming techniques; statistics with mainstream software.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 3553 or STAT 3503 or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 4607 [0.5 credit]**Bayesian Statistical Analysis (Honours)**

Probability basics for Bayesian statistics. Bayesian inference for simple exponential families. Markov Chain Monte Carlo for posterior inference. Empirical Bayes. Hierarchical Bayes. Bayesian inference for the multivariate normal model. Bayesian linear regression. More advanced topics may be included. Computer software will be used.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 3553 or permission of the School.

Lectures three hours a week, laboratory one hour a week.

STAT 4660 [0.5 credit]**Actuarial Mathematics II**

Empirical models, complete data, grouped data, credibility theory, failure time, accuracy, kernel estimation, goodness of fit tests, Bayesian analysis, inference for loss models, frequentist estimation, model selection.

Prerequisite(s): STAT 3660 with C+ or higher, or permission of the school.

Lectures three hours a week, tutorial one hour a week.

STAT 4661 [0.5 credit]**Life Contingent Risk Modelling II**

Policy values; multiple state models; formulae for probability; Markov multiple state models; pension mathematics; yield curves; interest rate risk; emerging costs for life insurance; equity linked insurance; deterministic and stochastic pricing; reserving, participating, and universal life insurance.

Precludes additional credit for STAT 3662 (no longer offered).

Prerequisite(s): STAT 3661 with a grade of C+ or higher; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 4905 [0.5 credit]**Honours Project (Honours)**

Consists of a written report on some approved topic or topics in the field of statistics, together with a short lecture on the report.

Includes: Experiential Learning Activity

Prerequisite(s): B.Math.(Honours) students only.

STAT 4907 [0.5 credit]**Directed Studies (Honours)**

Prerequisite(s): B.Math.(Honours) students only.

Sustainable and Renewable Energy (SREE)

Sustainable and Renewable Energy (SREE) Courses

SREE 1000 [0.0 credit]

Introduction to Sustainable Energy

The concept of energy sustainability. Energy-economy system. Global energy trends, the next 100 years. Energy reserves and resources. Primary and secondary clean energy. Energy use, efficiency and renewables. Energy and the environment/climate change. Sustainable energy choices and policies.

Prerequisite(s): registration in Sustainable and Renewable Energy Engineering.

Lectures one hour per week.

SREE 3001 [0.5 credit]

Sustainable and Renewable Energy Sources

Primary energy sources and their associated fundamental physics of conversion. Renewables: wind, large hydro, solar radiation, solar thermal. Fossil and biofuels.

Nuclear. Climate science: the carbon cycle and the role of anthropogenic GHG emissions in climate warming.

Terrestrial, thermodynamic and electrical limitations.

Includes: Experiential Learning Activity

Prerequisite(s): ENVE 2001 and MAAE 2300 and (ELEC 2602 or ELEC 3605 or fourth-year status in Environmental Engineering).

Lectures three hours per week, laboratories/problem analysis one hour per week.

SREE 3002 [0.5 credit]

Electrical Distribution Systems

Electricity Distribution: topology, load characteristics, load prediction, voltage regulation, power flow, power loss, capacitors, state estimation, system reliability, system protection. Distribution Automation: components and architectures, communication systems. Distributed Generation: guides and regulations, microgrids, case study.

Includes: Experiential Learning Activity

Prerequisite(s): SREE 3001 and (ELEC 2602 or ELEC 3605).

Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 3003 [0.5 credit]

Sustainable and Renewable Electricity Generation

Power system structures; photovoltaic cell: model, current/voltage curves, maximum power point tracking, grid connection; grid connection of wind generator; DC/AC and AC/DC converter simulation and analysis; energy storage classification; battery: equivalent circuit model, charging and discharging; renewable generation; feed-in tariff program.

Includes: Experiential Learning Activity

Prerequisite(s): SREE 3001 and (ELEC 2602 or ELEC 3605).

Lectures three hours per week, laboratories three hours per week alternate weeks.

SREE 4001 [0.5 credit]

Efficient Energy Conversion

Sustainable large-scale power generation. Geothermal, solar thermal, hydrogen power plants. Thermal grids and thermal energy storage. Environmental and economic aspects of power generation. Impacts of intermittent power generation. Sizing of wind, solar PV, run-of-river hydro, and offshore power plants. Current and future energy network topologies.

Includes: Experiential Learning Activity

Precludes additional credit for MECH 4403.

Prerequisite(s): MAAE 2300, MAAE 2400 and fourth year status in Sustainable & Renewable Energy Engineering.

Lectures three hours per week, laboratories/problem analysis three hours per week.

SREE 4002 [0.5 credit]

Modelling and Analysis of Energy Systems: Risk, Reliability, and Economics

Energy technologies exist within a context of economic, policy, and behavioral choices that affect their adoption.

This course will introduce engineering methods for analyzing risk, uncertainty, and system-level decision-making. We will investigate criteria that affect energy systems: reliability, resilience, economics, financing, health, and environmental impacts.

Prerequisite(s): fourth-year status in Engineering.

Lectures three hours per week.

SREE 4907 [1.0 credit]

Energy Engineering Project

Student teams develop professional-level experience by applying, honing, integrating and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): ECOR 3800, SREE 3002 and SREE 3003, and fourth-year status in Sustainable and Renewable Energy Engineering. Certain projects may have additional prerequisites or corequisites.

Systems and Computer Engineering (SYSC)

Systems and Computer Engineering (SYSC) Courses

Note: the Departments of Systems and Computer Engineering and Electronics offer courses in: Biomedical and Electrical Engineering, Communications Engineering, Computer Systems Engineering, Electrical Engineering, Software Engineering and Engineering Physics.

SYSC 1005 [0.5 credit]

Introduction to Software Development

Software development as an engineering discipline, using a modern programming language, Language syntax. Algorithm design. Tracing and visualizing program execution. Testing and debugging. Program style, documentation, reliability. Lab projects are drawn from a variety of application domains: digital image manipulation, computer games, robotics.

Includes: Experiential Learning Activity

Precludes additional credit for ECOR 1041, ECOR 1042, ECOR 1051, ECOR 1606, SYSC 1100 (no longer offered), COMP 1005 and COMP 1405.

Lectures three hours a week, laboratory three hours a week.

SYSC 2001 [0.5 credit]

Computer Systems Foundations

Computer architecture and organization: CPU, cache, memory, input/output, bus structures, interrupts; computer arithmetic: integer and floating point; CPU: instruction sets, addressing modes, instruction encoding. Input/output: programmed, interrupt-driven, block-oriented. Examples from several modern processor families.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2320, SYSC 3006.

Prerequisite(s): ECOR 1606 or SYSC 1005. Additional recommended background: SYSC 2006.

Lectures three hours a week, laboratory two hours a week.

SYSC 2003 [0.5 credit]

Introductory Real-Time Systems

Principles of event-driven systems. Review of computer organization. Assemblers and linkers. Development of embedded applications. Programming external interfaces, programmable timer. Input/output methods: polling, interrupts. Real-time issues: concurrency, mutual exclusion, buffering. Introduction to concurrent processes.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3006 and SYSC 3310.

Prerequisite(s): SYSC 2001 and SYSC 2006.

Lectures three hours a week, laboratory two hours a week.

SYSC 2004 [0.5 credit]

Object-Oriented Software Development

Designing and implementing small-scale programs as communities of collaborating objects, using a dynamically-typed or statically-typed programming language.

Fundamental concepts: classes, objects, encapsulation, information hiding, inheritance, polymorphism. Iterative, incremental development and test-driven development.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 1101, COMP 1006 and COMP 1406.

Prerequisite(s): SYSC 2006 or permission of the department, and second-year status in Engineering.

Lectures three hours a week, laboratory two hours a week.

SYSC 2006 [0.5 credit]

Foundations of Imperative Programming

The imperative programming paradigm: assignment and state, types and variables, static and dynamic typing. Memory management and object lifetimes: static allocation, automatic allocation in activation frames, dynamic allocation. Function argument passing. Recursion. Data structures: dynamic arrays, linked lists. Encapsulation and information hiding.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2401, SYSC 4006.

Prerequisite(s): Second-year status in Engineering.

Lectures three hours a week, laboratory two hours a week.

SYSC 2010 [0.5 credit]

Programming Project

Programming, testing, and debugging of small team-based software projects that use data from sensors to display results graphically. Modern programming tools: frameworks, libraries, version control, package management, tool chains. Sensors, signal acquisition, display, and basic filtering. Introductory network programming.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3010, SYSC 3110.

Prerequisite(s): 2nd year status in Biomedical and Electrical Engineering or Communications Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 2100 [0.5 credit]

Algorithms and Data Structures

Thorough coverage of fundamental abstract collections: stacks, queues, lists, priority queues, dictionaries, sets, graphs. Data structures: review of arrays and linked lists; trees, heaps, hash tables. Specification, design, implementation of collections, complexity analysis of operations. Sorting algorithms.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2002 (no longer offered) and COMP 2402.

Prerequisite(s): SYSC 2006 with a minimum grade of C-, and second-year status in Engineering.

Lectures three hours a week, laboratory two hours a week.

SYSC 2310 [0.5 credit]**Introduction to Digital Systems**

Number systems: binary, decimal, hexadecimal. Digital representation of information. Computer arithmetic: integer, floating point, fixed point. Boolean logic, realization as basic digital circuits. Applications: simple memory circuits, synchronous sequential circuits for computer systems. Finite state machines, state graphs, counters, adders. Asynchronous sequential circuits. Races.

Includes: Experiential Learning Activity

Precludes additional credit for ELEC 2607.

Prerequisite(s): Enrolment in Computer Systems Engineering, Communications Engineering, or Software Engineering, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 2320 [0.5 credit]**Introduction to Computer Organization and Architecture**

Computer organization: processor, memory, input/output, system bus. Microarchitecture. Instruction set architecture. Assembly language programming: addressing modes, instruction encoding, execution. Assembler. Simple digital I/O, programmable timer. Input/output methods: polling, hardware interrupts.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2001 and SYSC 3006.

Prerequisite(s): SYSC 2310 or ELEC 2607, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 2510 [0.5 credit]**Probability, Statistics and Random Processes for Engineers**

Discrete and continuous random variables. Joint and conditional probabilities, independence, sums of random variables. Expectation, moments, laws of large numbers. Introduction to statistics. Stochastic processes, stationarity, additive white Gaussian noise, Poisson processes. Markov processes, transition probabilities and rates, birth death processes, introduction to queueing theory.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3006 [0.5 credit]**Computer Organization**

Computer organization: processor, memory, input/output, system bus. Number systems: binary, decimal, hexadecimal. Assembly language programming: representation of data, instruction encoding, execution. Devices: keyboard, programmable timer, parallel interface. Input/output methods: polling, hardware/software interrupts.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2001, SYSC 2003, SYSC 2320 and SYSC 3310. May not be taken for credit by students in Computer Systems Engineering, Communications Engineering, or Software Engineering.

Prerequisite(s): SYSC 2006 and ELEC 2607.

Lectures three hours a week, laboratory two hours a week.

SYSC 3010 [0.5 credit]**Computer Systems Development Project**

Development of expertise in designing, implementing and testing industrial-quality embedded systems through team projects. Applying modern programming languages, system design practices, current development processes (refactoring, iterative and incremental development) as well as current team-management tools (communication, version control) to medium-scale projects.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 (no longer offered), and SYSC 3110.

Prerequisite(s): SYSC 2100 and either SYSC 2003 or SYSC 3310 (may be taken concurrently), and enrolment in Computer Systems Engineering.

Lectures two hours a week, laboratory three hours a week.

SYSC 3020 [0.5 credit]**Introduction to Software Engineering**

Introduction to software engineering principles, software development life-cycles. Modelling in software engineering. Current techniques, notations, methods, processes and tools used in software engineering. UML modelling. Introduction to software quality, software verification and validation, software testing.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3100, SYSC 3120, SYSC 4120 and COMP 3004.

Prerequisite(s): SYSC 2004 and (SYSC 2006 or SYSC 2002).

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3101 [0.5 credit]**Programming Languages**

Principles underlying different kinds of programming languages (procedural, functional, logic programming) and their semantics. Overview of machinery needed for language support (compilers, interpreters and run-time systems).

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3007.

Prerequisite(s): SYSC 2004.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3110 [0.5 credit]**Software Development Project**

Development of expertise in designing, implementing and testing maintainable, reusable software through team projects. Applying modern programming languages, design patterns, frameworks, UML and modern development processes (detection of olfactible source code defects, refactoring, iterative and incremental development, version control techniques) to medium-scale projects.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2404, SYSC 2010, SYSC 2101 and SYSC 3010.

Prerequisite(s): SYSC 2004 and SYSC 2100, and enrolment in Software Engineering.

Lectures two hours a week, laboratory three hours a week.

SYSC 3120 [0.5 credit]**Software Requirements Engineering**

Current techniques, notations, methods, processes and tools used in Requirements Engineering. Requirements elicitation, negotiation, modeling requirements, management, validation. Skills needed for Requirements Engineering and the many disciplines on which it draws. Requirements analysis: domain modeling, modeling object interactions; UML modeling. Introduction to software development processes.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3020 and COMP 3004.

Prerequisite(s): SYSC 2004 and enrolment in Software Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3200 [0.5 credit]**Industrial Engineering**

Techniques of operations research for decision-making in complex engineering systems. Linear programming, network models, PERT, integer programming, dynamic programming, queuing systems and inventory models. Problem solving is emphasized.

Includes: Experiential Learning Activity

Precludes additional credit for BUSI 2300, ECON 4004, or MATH 3801.

Prerequisite(s): MATH 1004 and MATH 1104, and second-year status in Engineering.

Lectures three hours a week, laboratory/problem analysis one and a half hours per week.

SYSC 3203 [0.5 credit]**Bioelectrical Systems**

Biomedical transducers, sensors, and biomedical actuators. Amplifier designs: inverting, noninverting, differential, and bioinstrumentation. Differentiators, integrators, and rectifiers. Oscillators and timers. Filter design. Sampling and quantization. Electrical machines. Electrical safety.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005 and (ELEC 2507 or ELEC 3605), and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 3303 [0.5 credit]**Real-Time Concurrent Systems**

Principles and practice of a systems engineering approach to the development of software for real-time, concurrent, distributed systems. Designing to achieve concurrency, performance, and robustness, using visual notations. Converting designs into programs. Introduction to hard real-time systems. Team project.

Includes: Experiential Learning Activity

Prerequisite(s): for students in the Faculty of Engineering and Design: (SYSC 2003 or SYSC 3310) and SYSC 2004. For students in Computer Science: COMP 2401 and COMP 2402.

Lectures three hours a week, laboratory two hours a week.

SYSC 3310 [0.5 credit]**Introduction to Real-Time Systems**

Principles of event-driven systems. Microcontroller organization. Development of embedded applications. Programming external interfaces, programmable timer. Input/output methods: polling, interrupts. Real-time issues: concurrency, mutual exclusion, buffering. Introduction to concurrent processes.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 2003, SYSC 3006.

Prerequisite(s): SYSC 2006 with a minimum grade of C- and SYSC 2320.

Lectures three hours a week, laboratory two hours a week.

SYSC 3320 [0.5 credit]**Computer Systems Design**

System on Chip (SoC)-based computer system design. SoC internal organization. Cache memory. Interfacing: external memory, hardware subsystems. Direct memory access. Floating point units. Introduction to field programmable gate arrays.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3601 and ELEC 4601.

Prerequisite(s): SYSC 3310 and third year status in Computer Systems Engineering, or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3500 [0.5 credit]**Signals and Systems**

Signals: energy and power signals, discrete-time and continuous. Linear systems and convolution. Fourier Transform; complex Fourier series; signal spectral properties and bandwidth. Laplace transform and transient analysis. Transfer functions, block diagrams. Baseband and passband signals, with applications to communications systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3600 and SYSC 3610.

Prerequisite(s): MATH 1005 and enrolment in Communications Engineering, and second-year status in Engineering.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 3501 [0.5 credit]**Communication Theory**

Review of signals, linear systems and Fourier theory; signal bandwidth and spectra; digital waveform coding; introduction to analog and digital modulation systems; synchronization; characterization and effects of noise; link budgets; communications media and circuits; applications to current communications systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3503.

Prerequisite(s): SYSC 3600 or SYSC 3610.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3503 [0.5 credit]**Communication Theory II**

Amplitude Modulation. Frequency Modulation. Performance of AM and FM in noise. Communication channels, channel models, noise sources, noise models. Digital modulation: ASK, FSK, PSK. Optimal reception, probability of error on the AWGN channel.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3501 or SYSC 4600.

Prerequisite(s): SYSC 3500 and (STAT 2605 or SYSC 2510).

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3600 [0.5 credit]**Systems and Simulation**

Properties of linear systems. Linear dynamic models of engineering systems. Applications of the Laplace transform. Transfer functions. Block diagrams. Frequency and time response. System simulation with digital computers.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3500 or SYSC 3610.

Prerequisite(s): MATH 1005 and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 3601 [0.5 credit]**Microprocessor Systems**

Microprocessor-based system design for different microprocessor families. Microprocessors: internal organization, instruction sets, address generation, pin-outs, bus cycles, signalling waveforms. Interfacing memory and I/O devices. Interrupt structures, direct memory access. Floating point coprocessors. System bus standards. Introduction to DSPs.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3320 or ELEC 4601.

Prerequisite(s): ELEC 2607, and SYSC 2003 or permission of the department.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3610 [0.5 credit]**Biomedical Systems, Modeling, and Control**

Properties of linear systems. Linear dynamic models of biomedical systems. Biomedical application of the Laplace transforms. Transfer functions. Block diagram. Frequency and time response. Feedback, control, and stability. Biomedical systems modeling and control.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3500 or SYSC 3600.

Prerequisite(s): MATH 1005 and enrolment in Biomedical and Electrical Engineering or Biomedical and Mechanical Engineering, and second-year status in Engineering.

Lectures three hours a week, laboratory three hours a week.

SYSC 3999 [0.0 credit]**Co-operative Work Term**

Includes: Experiential Learning Activity

SYSC 4001 [0.5 credit]**Operating Systems**

Introduction to operating system principles. Processes and threads. CPU scheduling. Managing concurrency: mutual exclusion and synchronization, deadlock and starvation. Managing memory and input/output. Concurrent programming, including interprocess communication in distributed systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3001 and COMP 3000.

Prerequisite(s): SYSC 2006 with a minimum grade of C-. Lectures three hours a week, laboratory three hours a week.

SYSC 4005 [0.5 credit]**Discrete Simulation/Modeling**

Simulation as a problem solving tool. Random variable generation, general discrete simulation procedure: event table and statistical gathering. Analyses of simulation data: point and interval estimation. Confidence intervals. Overview of modeling, simulation, and problem solving using SIMSCRIPT, MODSIM, and other languages.

Includes: Experiential Learning Activity

Prerequisite(s): (ECOR 2050 or SYSC 2510 or STAT 2605 or STAT 3502) and fourth-year status in Engineering, or permission of the Department.

Also offered at the graduate level, with different requirements, as SYSC 5001, for which additional credit is precluded.

Lectures three hours a week, laboratory one hour a week.

SYSC 4006 [0.5 credit]**Introduction to Systems Programming**

Introduction to C programming: Data types, flow control, functions, arrays, pointers, and arithmetic, logical and bitwise operators. Memory models, collections. Low-level I/O. Build pipeline (version control, make, preprocessing, compiling, linking) in Linux. Testing and debugging.

Precludes additional credit for SYSC 2006.

Prerequisite(s): Third-year status in Engineering, or enrollment in the M.Eng. Program in Electrical & Computer Engineering.

Lectures three hours a week.

SYSC 4101 [0.5 credit]**Software Validation**

Techniques for the systematic testing of software systems. Software validation and verification, software debugging, quality assurance, measurement and prediction of software reliability. Emphasis on the treatment of these topics in the context of real-time and distributed systems.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4004.

Prerequisite(s): SYSC 3120 or SYSC 3020.

Lectures three hours a week, laboratory/problem analysis three hours a week.

SYSC 4102 [0.5 credit]**Performance Engineering**

Techniques based on measurements and models, for predicting and evaluating the performance of computer systems. Instrumentation. Simple queueing models and approximations. Techniques for modifying software designs to improve performance.

Includes: Experiential Learning Activity

Prerequisite(s): (ECOR 2050 or STAT 3502) and SYSC 4001.

Also offered at the graduate level, with different requirements, as SYSC 5101, for which additional credit is precluded.

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4106 [0.5 credit]**The Software Economy and Project Management**

Introduction to software project management and economics; Return on software investments; Software life cycle; Work breakdown structure, scheduling and planning; Risk analysis and management; Product size and cost estimation; Earn value management; Statistical process control; Managing project team and process improvement; Bidding and contract types.

Prerequisite(s): SYSC 3120 (may be taken concurrently) and third-year status in Software Engineering or COMP 3004 and enrolment in the Bachelor of Computer Science.

Lectures three hours a week.

SYSC 4111 [0.5 credit]**Formal Methods in Software Engineering**

Introduction to formal methods in software engineering with coverage of propositional and first-order logic (syntax, semantics, proof theory), formal specification languages, bounded analysis and validation, formal specification tools, and model checking with finite-state machines, temporal logic, and model checking tools.

Prerequisite(s): COMP 1805, SYSC 3120, and SYSC 4001.

Lectures three hours a week.

SYSC 4120 [0.5 credit]**Software Architecture and Design**

Introduction and importance of software architectures and software system design in software engineering. Current techniques, modeling notations, methods, processes and tools used in software architecture and system design. Software architectures, architectural patterns, design patterns, software qualities, software reuse.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3004, SYSC 3020 and SYSC 4800 (no longer offered).

Prerequisite(s): SYSC 3120.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4201 [0.5 credit]**Ethics, Research Methods and Standards for Biomedical Engineering**

Ethical theories, ethical decision-making, biomedical research ethics: informed consent, confidentiality, privacy, research ethics boards; research methods: hypothesis formulation, data collection, sampling bias, experimental design, statistical literacy; regulations for design, manufacture, certification of medical devices; impact of technology and research (social, political, financial).

Includes: Experiential Learning Activity

Prerequisite(s): ELEC 3605 or SYSC 3203.

Lectures three hours a week, problem analysis one and a half hours per week.

SYSC 4202 [0.5 credit]**Clinical Engineering**

Overview of the Canadian health care system; brief examples of other countries; clinical engineering and the management of technologies in industrialized and in developing countries; safety, reliability, quality assurance; introduction to biomedical sensor technologies; applications of telemedicine; impact of technology on health care.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Biomedical and Electrical or Biomedical and Mechanical Engineering.

Also offered at the graduate level, with different requirements, as BIOM 5406, for which additional credit is precluded.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4203 [0.5 credit]**Bioinstrumentation and Signals**

Bioinstrumentation and biological signals; instrumentation systems, electrical safety, and biocompatibility; bioelectric signals; biopotential electrodes: material properties, selection; data acquisition; signal processing; biomedical imaging technologies; bioamplifier systems performance and characteristics; major physiological systems and associated measurements.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3610 and (ELEC 3605 or SYSC 3203) and fourth-year status in Biomedical and Electrical Engineering or fourth-year status in Biomedical and Mechanical Engineering.

Lectures three hours a week, laboratory/problem analysis three hours a week.

SYSC 4205 [0.5 credit]**Image Processing for Medical Applications**

Two-dimensional signals, filters, and Fourier transforms. Image acquisition, sampling, quantization and representation. Image perception. Digital and film cameras. Medical imaging technologies. Image processing operations: histogram, convolution, morphological, segmentation, registration. Image compression and formats.

Includes: Experiential Learning Activity

Prerequisite(s): MATH 1005 and fourth-year status in Engineering.

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4310 [0.5 credit]**Computer Systems Architecture**

Evolution of computer systems architecture to improve performance. Memory hierarchy, hardware accelerators. Instruction level parallelism, pipelining, vector processing, superscalar, out-of-order execution, speculative execution. Thread level parallelism, multi-core, many-core, heterogeneous systems. Processor-level interconnect bus, non-uniform memory access. Application-oriented architectures. Virtualization.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4507.

Prerequisite(s): SYSC 3320, and enrolment in Computer Systems Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4320 [0.5 credit]**Case Studies in Computer Systems**

Examples of several modern computer systems are presented in a computer systems context: system objectives, software and hardware components, interactions. The case studies present computer systems trends emerging in practice.

Prerequisite(s): SYSC 4310, and enrolment in Computer Systems Engineering.

Lectures three hours a week, problem analysis one hour a week.

SYSC 4405 [0.5 credit]**Digital Signal Processing**

Discrete time signal and system representation: time domain, z-transform, frequency domain. Sampling theorem. Digital filters: design, response, implementation, computer-aided design. Spectral analysis: the discrete Fourier transform and the FFT. Applications of digital signal processing.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3500 or SYSC 3600 or SYSC 3610.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4415 [0.5 credit]**Introduction to Machine Learning**

Introduction to supervised and unsupervised machine learning (ML), including deeper knowledge of several algorithms of each type. Evaluation and quantification of predictive performance of ML systems. Use of one or more ML development environments.

Precludes additional credit for COMP 3105, COMP 4105 (no longer offered).

Prerequisite(s): (ECOR 2050 or STAT 3502 or STAT 2605 or SYSC 2510), SYSC 2006 (with a minimum grade of C-), and third-year status in Engineering.

Lectures three hours a week, problem analysis one hour a week.

SYSC 4502 [0.5 credit]**Communications Software**

Communications software architectures, protocols and operating systems. Application layer protocols, APIs and socket programming. P2P algorithms, network virtualization, SDN. Reliable data transfer algorithms, FSM, MSC. Network security. Multimedia applications, RTSP, CDN, DASH, RTP, RTCP. Packet scheduling algorithms, DiffServ, IntServ, RSVP. Traffic classification, cross-layer optimization.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 2004 and SYSC 4602.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 4504 [0.5 credit]**Fundamentals of Web Development**

WWW architecture, web servers and browsers, core protocols. Web pages, their structure, interpretation and internal representation. Client-side and server-side programming. Data representation. Interfacing with databases and other server-side services. Cookies, state management, and privacy issues. Security. Web services.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 2406.

Prerequisite(s): SYSC 2004. Additional recommended background: SYSC 4602 or SYSC 3303.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4505 [0.5 credit]**Automatic Control Systems I**

Review of Laplace transform techniques. Effects of feedback: frequency response, pole-zero positions. Compensation: root locus, Bode plots. State variables: formulation, solution of linear systems, examples of simple second-order non-linear systems. Discrete time systems: z-transforms. Signal reconstruction.

Includes: Experiential Learning Activity

Precludes additional credit for MAAE 3500, MAAE 4500 (no longer offered).

Prerequisite(s): MATH 2004 and (SYSC 3500 or SYSC 3600 or SYSC 3610).

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4507 [0.5 credit]**Computer Systems Architecture**

Evolution of computer systems architecture, influences of changing technology, techniques to improve performance, memory hierarchy, hardware accelerators. Instruction level parallelism, pipelining, vector processing, superscalar, out of order execution, speculative execution. Thread level parallelism, multi-core, many-core, heterogeneous systems. Evolution of architectures for specific application domains.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4310.

Prerequisite(s): ELEC 2607 and (SYSC 2001 or SYSC 3006).

Lectures three hours a week, laboratory/problem analysis one hour a week.

SYSC 4600 [0.5 credit]**Digital Communications**

Review of probability, random variables, signal representation. Baseband data transmission: Nyquist criterion, equalization, optimal receiver, error probability. Digital modulation, performance. Synchronization. Introduction to information theory. Error detection and correction. Spread spectrum. Applications to current digital wired and wireless communications systems.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 3503 and SYSC 4604.

Prerequisite(s): SYSC 3501 and STAT 3502.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4602 [0.5 credit]**Computer Communications**

Layered network architectures, TCP/IP suite, circuit switching, packet switching. Physical media, data transmission, multiplexing. Data link controls, MAC protocols, random access, polling, IEEE 802 standards. Bridges, switched Ethernet, VLANs. Routing algorithms, Internet routing protocols, datagram networks, virtual circuit networks. Transport protocols.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 3203.

Prerequisite(s): ECOR 2050 or SYSC 2510 or STAT 2605 or STAT 3502 (may be taken concurrently), and third-year status in Biomedical and Electrical, Electrical, Communications, Computer Systems, Software, or Sustainable and Renewable Energy Engineering.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4604 [0.5 credit]**Digital Communication Theory**

Introduction to information theory, source coding and data compression, Error control coding, Trellis coded modulation, advanced topics of current interest: spread spectrum; digital wireless communications.

Includes: Experiential Learning Activity

Precludes additional credit for SYSC 4600.

Prerequisite(s): SYSC 3503.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4607 [0.5 credit]**Wireless Communications**

Wireless radio channel characterization, diversity, equalization; cellular architecture, multiple access principles, spread spectrum systems, radio resource management; examples from modern wireless systems, networks, and standards, including cellular networks, WLANs, ad hoc networks, and satellite systems.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3501 or SYSC 3503.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4700 [0.5 credit]**Telecommunications Engineering**

Telecommunications as a national and international infrastructure. Systems view of network architecture: transmission, access, switching, multiplexing, signalling, and teletraffic. Network planning, management, security and control. Role of government, regulation and competition. Current telecommunications network evolution.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Electrical, Computer Systems or Communications Engineering, and (SYSC 3501 or SYSC 3503).

Lectures three hours a week, laboratory/problem analysis three hours alternate weeks.

SYSC 4701 [0.5 credit]**Communications Systems Lab**

Project-oriented level experience in the design of communication systems to meet user requirements. Lectures on queuing theory and teletraffic analysis; system specification and design: requirements analysis, solution alternatives, evaluation of alternative technologies, design, costing, implementation, test.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Communications Engineering or permission of the department.

Lectures two hours a week, laboratory four hours a week.

SYSC 4805 [0.5 credit]**Computer Systems Design Lab**

Project-oriented experience in the design of embedded computer systems. Lectures will discuss practical aspects related to the design and development of embedded systems, starting from sensor data acquisition and processing to decision systems, testing and embedded-system based project management, with practical application examples.

Includes: Experiential Learning Activity

Prerequisite(s): SYSC 3320 or SYSC 3601, and enrolment in Computer Systems Engineering.

Lectures two hours a week, laboratory four hours a week.

SYSC 4806 [0.5 credit]**Software Engineering Lab**

Applying the full spectrum of engineering and programming knowledge acquired in the program through team projects in the laboratory. Practice in doing presentations and reviews. Lectures will discuss software engineering issues as they relate to the projects, from a mature point of view.

Includes: Experiential Learning Activity

Prerequisite(s): COMP 3005, SYSC 3110, and enrolment in Software Engineering, or permission of the department.

Lectures two hours a week, laboratory four hours a week.

SYSC 4810 [0.5 credit]**Introduction to Network and Software Security**

Fundamental concepts, terminologies, and theories of computer security; principles underlying common security controls; various types of threats and attacks on networks and software systems, how they work, and controls for dealing with them; security risk assessment and management; legal and ethical aspects of computer security.

Includes: Experiential Learning Activity

Precludes additional credit for COMP 4108.

Prerequisite(s): fourth-year status in Communications, Computer Systems or Software Engineering.

Lectures three hours a week, problem analysis one and a half hours a week.

SYSC 4906 [0.5 credit]**Special Topics**

At the discretion of the Department, a course dealing with selected advanced topics of interest to students in Biomedical and Electrical, Communications, Computer Systems, Electrical, Software Engineering, and Engineering Physics may be offered.

Prerequisite(s): permission of the Department.

SYSC 4907 [1.0 credit]**Engineering Project**

Student teams develop professional-level experience by applying previously acquired knowledge to a major design project. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year status in Engineering. Certain projects may have additional prerequisites.

SYSC 4917 [1.0 credit]**Biomedical Engineering Project**

Student teams develop professional-level experience by applying previously acquired knowledge to a major design project in biomedical engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): Fourth-year status in Biomedical and Electrical Engineering. Certain projects may have additional prerequisites.

SYSC 4927 [1.0 credit]**Software Engineering Project**

Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in software engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Software Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.

Lecture one hour a week, laboratory seven hours a week.

SYSC 4937 [1.0 credit]**Communications Engineering Project**

Student teams gain professional-level experience by applying and extending previously acquired knowledge in a major design project in communications engineering. Lectures discuss project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year status in Communications Engineering and ECOR 4995 (may be taken concurrently). Certain projects may have additional prerequisites.

Lecture one hour a week, laboratory seven hours a week.

Technology, Society, Environment Studies (TSES)

Technology, Society, Environment (TSES) Courses

TSES 2006 [0.5 credit]**Ecology and Culture**

Cultural adaptations to the environment are set within globalization processes. New symbolic, historical and political ecologies arise out of the hubris of classical models. The advocacy role of applied ecological anthropology and the consequences of Western cultures' adaptive capacities will be examined.

Prerequisite(s): second year standing or equivalent.

Lectures three hours a week.

TSES 2305 [1.0 credit]**Ancient Science and Technology**

Development of science and technology in the ancient world and their practical application. The craftsman and artisan in society; the attitude of intellectuals to science and manual labour. Effects of the institution of slavery. Suitable for students with no previous knowledge of Greece or Rome.

Also listed as CLCV 2305.

Prerequisite(s): second-year standing or equivalent.

Lectures two hours a week.

TSES 3001 [0.5 credit]**Technology-Society Interactions**

Ethical issues in introducing technology; historical review of technology and human development; effects on society of medical and communications technologies; automation and its effects on society, especially work; impact of technology on international affairs, especially through multinational enterprises. Guest lectures.

Includes: Experiential Learning Activity

Precludes additional credit for TSES 3000 and TSES 3500.

Prerequisite(s): at least second-year standing.

Lectures and workshops three hours per week.

TSES 3002 [0.5 credit]**Energy and Sustainability**

History of energy use by humans; utilization of renewable energy sources; energy and agriculture; energy and mineral resources; options for electricity generation; nuclear energy; risks of accidents in large systems, e.g. nuclear plants, hydroelectric dams. Guest lectures.

Includes: Experiential Learning Activity

Precludes additional credit for TSES 3000 and TSES 3500.

Prerequisite(s): at least second-year standing.

Lectures and workshops three hours per week.

TSES 3500 [0.5 credit]**Interactions in Industrial Society**

Ethical issues involving technology; effects on society of automation, medical and communications technologies; technology and international affairs; energy use by humans; renewable energy sources; energy in agriculture and mineral extraction; electricity generation; nuclear energy; accidents in large systems, e.g. nuclear plants and hydroelectric dams.

Precludes additional credit for TSES 3001, TSES 3002 and TSES 3000.

Prerequisite(s): at least second-year standing.

Lectures three hours per week for both terms.

TSES 4001 [0.5 credit]**Technology and Society: Risk**

Examines the complex practice of evaluating technology's impact on society and the environment; risk analysis; cost-benefit analysis; technology regulation; retrospective project assessment; necessary aspects of assessment and assessment examples. Guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4002 [0.5 credit]**Technology and Society: Forecasting**

Methods used for forecasting technological and social change; technological and social change portrayed in literature; science fiction factors involved in such change. Guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4003 [0.5 credit]**Technology and Society: Innovation**

Technological and social innovation, especially in Canada: historical examples; the relation of innovation to economic development; analysis of the steps involved; effect on employment; impediments and incentives. Guest lecturers.

Prerequisite(s): third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4005 [0.5 credit]**Information Technology and Society**

Investigation of the human and social impacts of electronic information and communication on our working, educational, and personal lives from various disciplinary perspectives; problem issues and competing values in the creation, manipulation, dissemination, and control of information are identified; resolution initiatives encouraged. Guest lecturers.

Prerequisite(s): third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4006 [0.5 credit]**Technology and Society: Work**

Explores the relationship between technology, employment and the individual; work organizations; employment restructuring; rural/urban split; the impact of information technologies; demographic impacts and globalization; Canadian issues and public policy explored. Guest lecturers.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4007 [0.5 credit]**Product Life Cycle Analysis**

Life cycle analysis of products and processes, from resource extraction through design and use to waste management or recycling; social and environmental implications of product design and use; how we value material objects and the environment; consumerism; evolution of design. Guest lectures.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4008 [0.5 credit]**Environmentally Harmonious Lifestyles**

Brief history of humans as part of the ecosystem; religious and ethical views; current degree of ecosystem disturbance by industrial society; innovations in products and services furthering the sustainability of the ecosystem, emphasis on the Canadian context. Guest lecturers and a major project.

Prerequisite(s): third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4009 [0.5 credit]**Special Topics**

Reading course for students who wish to investigate a particular topic relevant to TSES.

Prerequisite(s): third-year standing or equivalent and permission of the Chair of TSE.

TSES 4010 [0.5 credit]**Special Topics**

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): third-year standing or equivalent.

Lectures three hours a week.

TSES 4011 [0.5 credit]**Technology and Society: Development**

Created in collaboration with Engineers Without Borders Carleton, the course explores appropriate ways of meeting technological needs of communities. Uses Canadian and African case studies to examine how capacity building has a greater impact than simple delivery of technological goods.

Prerequisite(s): third-year standing or equivalent.

Lectures three hours a week.

TSES 4012 [0.5 credit]**Science and Fiction: Creating Tomorrow**

Scenarios are used to speculate about the planned future. Science fiction and speculative fiction project ideas about imagined futures. Using readings from scenarios, speculative fiction and science fiction the course explores the mutual shaping of fiction, science and technology. Prerequisite(s): third-year standing or equivalent.

TSES 4014 [0.5 credit]**Technology-Society: Time**

Time is a universal human experience, but it presents some profound mysteries. It governs our behaviour on personal, societal and cultural levels. This course will bring together experts from physics, sociology, philosophy, biology, literature and psychology to illuminate our understanding.

Prerequisite(s): third-year standing or equivalent. Lectures three hours a week.

Women's and Gender Studies (WGST)

Women's and Gender Studies (WGST) Courses**WGST 1808 [1.0 credit]****Introduction to Feminist Social Transformation**

Overview of intersectional feminist debates as well as historical and contemporary theoretical traditions in gender and sexuality studies, critical race studies, and disability studies. Topics include the social construction of femininity, masculinity, and other identifications; Indigenous, decolonial, and transnational feminisms.

Includes: Experiential Learning Activity
Precludes additional credit for FYSM 1402.
Lectures and discussion three hours a week.

WGST 2800 [0.5 credit]**Intersectional Identities**

Critical examination of the multiple intersections between gender, as a relation of power and social identity, as these intersect with (neo)colonialism, racism, poverty, ableism and heterosexism in a globalized world.

Includes: Experiential Learning Activity
Prerequisite(s): one of WGST 1808, HUMR 1001, FYSM 1402 or FYSM 1403 or permission of the Institute of Women's and Gender Studies.
Lectures and discussion three hours a week.

WGST 2801 [0.5 credit]**Activism, Feminisms, and Social Justice**

A comparative, interdisciplinary examination of feminist activism in the modern era. A range of perspectives and materials are used to examine the objectives, scope, and impact of feminists' efforts to effect social and political change in different historical, cultural, and national settings.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 2803 [0.5 credit]**Body Matters: The Politics of Bodies**

Introduction to feminist studies of globalization and politics of bodies. Globalization of ideas, cultures, economics and politics, movement of bodies, bodies as spaces for disrupting norms of sex, gender, race, class, ability, sexuality, embodiment and embodied resistance in a globalized world.

Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 2810 [0.5 credit]**Sex For Sale**

Explores feminist perspectives on the sex industry, critically analyzing various legal approaches to regulation and the social meanings assigned to sex work.

Includes: Experiential Learning Activity
Prerequisite(s): Second year standing and WGST 1808 or FYSM 1402.
Lecture and discussion three hours per week.

WGST 2811 [0.5 credit]**Masculinities**

Theoretical, experiential, cultural and policy issues around masculinities studies. The complexities of masculinities; the intersections of feminist and masculinity studies. Topics may include hegemonic, racialized, homosexual, and Other(ed) masculinities. Feminist theories and transnational perspectives frame course content and discussions.

Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 2812 [0.5 credit]**Selected Topics in Women's and Gender Studies**

An interdisciplinary analysis of one or more topics in women's and gender studies.

Includes: Experiential Learning Activity
Prerequisite(s): second-year standing.
Lectures and discussion three hours a week. This course is repeatable when the topic changes.

WGST 2814 [0.5 credit]**Gender, Sexuality and Cultural Production**

How gender and cultural (re)production (literature, visual/performing arts, social media) and consumption articulate, circulate, and transform each other within economic, political, and social contexts. Emphasis on role, object, processes, and representations.

Prerequisite(s): second-year standing.
Lectures and discussion three hours a week.

WGST 3001 [0.5 credit]**Theory and Research in Feminist Social Transformation**

Interdisciplinary and intersectional approach introducing students to contemporary feminist, Indigenous, decolonial, and transnational theories, issues, conflicts, methodologies, and critiques of prevailing approaches to the construction of knowledge. Themes include, feminist epistemology, ontology, knowledge, and ethics in feminist research.

Includes: Experiential Learning Activity

Precludes additional credit for WGST 3809 (no longer offered), WGST 3810 (no longer offered).

Prerequisite(s): Third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.

Lecture three hours a week.

WGST 3803 [0.5 credit]**Feminisms and Transnationalism**

Feminist analyses of the diversity of transnational experiences around rights, health, education, motherhood, fathering, work, social media and technological change, among others. Topics may include: migration, environment, wars/conflicts, neocolonialism, diaspora, human trafficking, refugee issues and displaced populations.

Prerequisite(s): third-year standing, and 1.0 credit in WGST; or permission of the Institute.

WGST 3806 [0.5 credit]**Girlhoods**

The emerging discipline of girlhood studies; social and cultural constructions of girlhood and categories of difference. Topics may include the commercialization of girlhood, popular culture and girls, negotiating identities, violence, sexualities, agency and activism in a globalizing world.

Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute.

Lecture three hours a week.

WGST 3807 [0.5 credit]**Gendered Violence**

Theories, concepts and contexts of the complex manifestations of gendered violence in the lives of women, men and children globally.

Precludes additional credit for WGST 3005 Section "A", if taken in Winter 2012 and WGST 3005 Section "A" if taken in Fall 2009.

Prerequisite(s): third-year standing and 1.0 credit in WGST or permission of the Institute of Women's and Gender Studies.

Lecture three hours a week.

WGST 3812 [0.5 credit]**Selected Topics in Women's and Gender Studies**

An interdisciplinary analysis of one or more topics in women's and gender studies.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing and 1.0 credit in WGST.

Lecture three hours a week.

WGST 4003 [0.5 credit]**Traversing Feminisms**

Interdisciplinary overview of key historical concepts and issues in Women's and Gender Studies in the areas of theory, epistemology, and research design. Topics will vary from year to year. Provides additional background for students entering Women's and Gender Studies from other disciplines.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Institute.

Also offered at the graduate level, with different requirements, as WGST 5003, for which additional credit is precluded.

Seminar three hours a week.

WGST 4060 [0.5 credit]**African Feminisms**

African feminisms as theoretical interventions and as political practice, and as diverse forms. Gender as a marker of power: status, hierarchy, social capability, and as a system of distribution of resources, responsibilities and solidarities.

Includes: Experiential Learning Activity

Also listed as AFRI 4060.

Prerequisite(s): Fourth year standing and WGST 1808 or FYSM 1402 OR permission of the Institute of Women's and Gender Studies.

Seminar three hours per week.

WGST 4800 [0.5 credit]**Women's and Gender Studies Practicum**

Experience in research through a combination of classroom seminars and a field placement. Each project will be negotiated individually as a contract between the student, instructor and institutional partner.

Includes: Experiential Learning Activity

Precludes additional credit for WGST 4903 (no longer offered).

Prerequisite(s): Fourth year standing and WGST 3001 OR WGST 3809 (no longer offered) and WGST 3810 (no longer offered), with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.

WGST 4801 [1.0 credit]**Women's and Gender Studies Practicum**

Experience in applied feminisms through a combination of classroom seminars and internship. Each project will be negotiated individually as a contract between the student, instructor and institutional partner. Students must complete both the in-class and the internship portion of the course.

Includes: Experiential Learning Activity

Precludes additional credit for WGST 4800, WGST 4903 and WGST 4904 (no longer offered).

Prerequisite(s): Fourth year standing and WGST 3001 OR WGST 3809 (no longer offered) and WGST 3810 (no longer offered) with a minimum 6.5 CGPA in B.A. Hons. Women's and Gender Studies program or permission of the Institute.

Also offered at the graduate level, with different requirements, as WGST 5920, for which additional credit is precluded.

This full-credit course is offered intensively in one term.

WGST 4811 [1.0 credit]**Honours Research Project in Women's and Gender Studies**

Students will undertake a major research project on some aspect of women's and gender studies under the supervision of a faculty member.

Includes: Experiential Learning Activity

Prerequisite(s): A major CGPA of at least 11.00, plus WGST 3809 and WGST 3810 OR WGST 3001 and fourth-year standing in B.A. Hons. Women's and Gender Studies program, or permission of the Institute of Women's and Gender Studies.

WGST 4812 [0.5 credit]**Selected Topics in Women's and Gender Studies**

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing and 1.0 credit in Women's and Gender Studies or permission of the Institute of Women's and Gender Studies.

Seminar three hours a week. This course is repeatable when the topic changes.

WGST 4814 [0.5 credit]**Independent Study**

Reading or research course supervised by a faculty member. Written proposal approved by the supervisor must be submitted before last day of course changes. Normally, only 0.5 credit of independent study may be counted in the program.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in a Women's and Gender Studies program or permission of the Institute of Women's and Gender Studies.

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